The Canadian Medical Association Journal

With which is incorporated the MONTREAL MEDICAL JOURNAL and the MARITIME MEDICAL NEWS

EDITED BY
ANDREW MACPHAIL
MONTREAL

BARLOW MEDICAL LIBRARY
742 NORTH BROADWAY
LOS ANGELES, CAL

OLD SERIES VOL. XLV
NEW SERIES VOL. VI

LIBRARY OF THE
LOS ANGELES COUNTY MEDICAL ASSOCIATION
634 SOUTH WESTLAKE AVE.

TORONTO
MORANG & CO. LIMITED
1916

7670

The Canadian
Medical Association Journal

Vol. VI. JANUARY, 1916 No. 1

PRESIDENTIAL ADDRESS

By G. Clowes Van Wart, M.D., F.A.C.S.

Fredericton, N.B.

THE president's address, a time honoured custom, falls to my lot. I wish to thank you most heartily for the honour bestowed upon me by electing me your president for two consecutive years. Before proceeding further I would like to extend a hearty welcome to you all particularly to those who have come from outside the province to assist in making this meeting a success.

The meeting of 1914 held in St. John, following so closely the Canadian Medical Association, was a business not a programme one. Since we last met, the Empire, of which Canada is such an integral part, is face to face with the greatest war in the history of man. Our profession was among the first to respond to the call of duty and many more of its members are willing to give their services. Active members and former officers of this society are now in charge of hospitals at the front. We hope with the conclusion of hostilities right will triumph and peace will be placed upon a permanent basis. The great progress in science during the past half century has made this war the most horrible in the world's history. The knowledge obtained through years of experiment is now being diverted for the destruction of man. On the other hand the advancement in medical science and sanitation continues to be used for the alleviation of suffering and the betterment of sanitary conditions in a larger degree. It would be interesting to review the progress made by medical science in preventive medicine, serum therapy, *x*-ray, laboratory research work, surgical specialities and surgical technique, but time will not permit me to do so. In passing I wish to refer to anti-typhoid inoculation. Major Russell of the United States Army

Read at the thirty-fifth annual meeting of the New Brunswick Medical Society, Fredericton, July 20th, 1915. Received for publication, September 15th, 1915.

reports the vaccination of eighty-five thousand troops without a mishap, and only three cases of typhoid fever developed. In an epidemic of typhoid fever in Troy, Pennsylvania, Hunt in *American Journal of Medical Sciences*, June, 1913, reports that the mortality of the vaccinated was 0·28 per cent., among the unvaccinated 8.85 per cent. When the reports of our army inoculations are available we shall no doubt find this record maintained.

And now referring to the Society itself permit me to make a few suggestions:

First—To amend the By-law of the Society as regards the date of meeting. Article 1, Section 1, reads: "The regular annual meeting of the new Brunswick Medical Society shall be held on the third Tuesday of July at 10 a.m." If the Canadian Medical Association had met this year at Vancouver as planned, July 6th to 9th inclusive, it would not have been practicable for the delegates of this Society to have attended both meetings. For this reason I think the date for holding the provincial meeting should be left with the officers of the Society.

Secondly—The coroner's court. A medical man is asked to conduct a post mortem examination, give evidence before the court and express a medico-legal opinion for the paltry sum allowed by the provincial statutes. The newer provinces of the Confederation have set us an example which we would do well to follow.

Thirdly—Tuberculosis. (1) Education and treatment of incipient cases; (2) Care of advanced and incurable ones. It is hard to induce our legislative bodies, particularly municipal councils, to make reforms where the question of expense is involved. In 1911 at the St. John meeting committees were appointed from several of the counties to interview their respective municipal councils for financial aid to combat tuberculosis and particularly to provide for the advanced and incurable cases. Only a few of the committees reported and these reports were not very promising. St. John County, I may say, is the only one that has accomplished anything. The Jordan Memorial Sanatorium at River Glade provides for a limited number of incipient cases. The second annual report of this santatorium for the year ending October 31st, 1914, states that the number of patients admitted was sixty-seven. We appreciate what this institution is doing from an educational standpoint. It is only a nucleus of what the province should have. What provision is there for those advanced and incurable cases of pulmonary tuberculosis without friends or financial means? Our hospitals do not admit them and municipal homes should not do

so. Proper environment and treatment should be provided, It seems to me that it is the duty of the municipality and not of private organizations such as churches, benefit and labour organizations to provide for them. The public conscience is yet to be quickened. This Society should continue to persevere and see that something of a practical value is done.

Fourthly—The cancer problem. There is no disease that has brought so much disrepute to surgery as delayed surgical treatment of cancer. The public should be impressed with the necessity of seeking early medical advice since the golden opportunity is frequently lost by delay. Late surgical intervention is only palliative while early and radical surgical treatment is frequently curative. As yet the cause of cancer is *sub judice*. You can help by, "Always being on the watch to make an early diagnosis and by insisting on proper treatment without delay."

Fifthly—*The British Pharmacopœia*. The fifth edition of the *British Pharmacopœia* came in force in Great Britain, January 2nd, 1915. Important changes have been made since the publication of the 1898 issue. Unfortunately the Adulteration Act specifically mentions the *Pharmacopœia* of 1898 and leaves no room for the changes ordered in the 1914 edition. I would suggest that this Society in conjunction with the various medical and pharmaceutical associations in Canada should pass a resolution calling upon the Federal Government to amend the Adulteration Act rendering the successive editions of the *British Pharmacopœia* authoritative throughout Canada at the same time they become authoritative in Great Britain.

Sixthly—The Public Health Act. Before any child can enter any public school there must be evidence of successful vaccination or that such child is immune. As far as I can learn, the Act is only enforced in the larger centres of the province, in the country it is ignored. The benefit of a successful vaccination against smallpox has been proven beyond any doubt and for this reason I think the Act ought to be enforced. The school inspectors could very well give this their careful attention. In many of our cities and towns compulsory attendance at school from the ages of six to fourteen is required unless it be shown to the satisfaction of the Board of School Trustees that the bodily and mental condition of the child is such as to prevent attendance at school. Compulsory education should be accompanied by medical inspection. Educationalists are quite agreed as to the benefits derived from medical inspection of the Public Schools. Many a child's common school education is

curtailed on account of some abnormality which could be corrected, such as defective eyesight, impaired hearing, headache, etc. The first and main argument against the introduction of medical inspection is the expense involved. I feel that if inspection were once introduced in our schools that the good results produced would make it very popular with the tax payers.

Seventhly—Vital statistics. The result obtained under the present system is a "farce". This is the expression used by an official high in the service of the provincial government. Only incomplete returns of the number of births and deaths are recorded. The information as to the cause of death or the percentage of death from any particular disease is so meagre that it is of no value as a record. A complete and accurate record of vital statistics is essential to the state, and should in my opinion be under the control of the Federal Government. The system then would be uniform in each province and would be a great improvement over the present system.

At the meeting of the Congress of Clinical Surgeons of North America in Chicago, 1913, a committee reported on the standardization of hospitals in United States and Canada. The report of the committee was adopted and ordered printed for distribution. There is much in this report for reflection. Hospital administrators would do well to consider and act promptly on the suggestions made.

Examinations under the Medical Council of Canada were held in Montreal, October, 1913, and October, 1914, and in Winnipeg, June, 1915. It would be well if there was an examination centre in the Maritime Provinces. A candidate who passes this examination is entitled to practise in any province of Canada. Reciprocity between the Council of Physicians and Surgeons of New Brunswick and the General Medical Council of the United Kingdom was established in 1914. Any person who holds a license of the Council of Physicians and Surgeons of New Brunswick, granted after examination, together with a license to practise in the province is entitled to be registered in the colonial list of the medical register of the United Kingdom.

During January of the present year I was requested by the "Canadian Central Executive for Relief of the Belgian Medical and Pharmaceutical Professions" to ask for subscriptions from the medical men of our province. The committee was organized at Toronto upon the request of Sir Rickman J. Godlee, ex-president of the Royal College of Surgeons of England, and chairman of a most representative committee in England. In February a circular stat-

ing the object of the appeal was sent by our secretary, Dr. D. C. Malcolm, to each practitioner in the province. The subscription list was closed April 15th, and the money forwarded to the treasurer, Dr. D. J. Gibb Wishart, Toronto. The name and amount of each subscription was officially acknowledged in the June number of the CANADIAN MEDICAL ASSOCIATION JOURNAL.

I wish to remind you that this society is affiliated with the Canadian Medical Association and we are entitled to three represe ı-tatives on the Executive of the association. The president is a member of the Executive ex-officio. The CANADIAN MEDICAL ASSOCIATION JOURNAL is the official organ of the association, and I would ask those who are not already subscribers to send in their subscriptions. A refund of fifty cents is made to our society for each subscription from the members of the society. The JOURNAL is scientific, of high order, and represents the profession thoughout the Dominion.

During the year Dr. C. H. L. Johnston, Dr. Daniel Berryman, and Dr. John R. McIntosh, of St. John, have passed away. Dr. McIntosh always took an active interest in this Society and was a very prominent practitioner in the surgical specialities, the eye, ear, nose and throat.

The number of names on the medical register May 1st, 1915, was two hundred and fifty-one. The average attendance at the Society's meeting for the last eleven years, 1904-1914 inclusive, was forty-four .In the past this Society has had its sessions in the larger centres as St. John, Moncton, Fredericton, and St. Stephen. The attendance at each meeting has been chiefly from the place where the meeting was held and its vicinity. It is evident that the attendance is not a numerical representation of the province and that there is need of a stimulus to increase the attendance. It is left to the president and the secretary to arrange a programme. They, I assure you, have their difficulties. Request to be present and to take part in the programme is sent to each registered practitioner. Why is the attendance so small? Apathy of the officers and failure to present an attractive programme may be the cause but most of the fault is lack of interest. I have been told, among other reasons best passed over, that it is a waste of time to attend the meetings. Can we not make our meetings more attractive by the demonstration of interesting specimens in morbid anatomy, and the clinical side of the Society of a greater educational value through presentation of patients, particularly those illustrating rare and unusual forms of diseases? Those of you who attended the Canadian

Medical Association in St. John last year must have been impressed with the clinical side of the programme. The cases presented were both as rare and instructive as you would see in the clinics of our largest Canadian cities.

What does the Society offer the profession?

The first and in some respects the most important function is to lay a foundation for that unity and friendship which is essential to the dignity and usefulness of the profession. Strife seems rather to be the very life of the practitioner whose warfare is incessant against disease, ignorance, and prejudice. Sir William Osler, Bart., says "The well conducted medical society should represent a clearing house in which every physician of the district would receive his intellectual rating and in which he could find out his professional assets and liabilities. We doctors do not 'take stock' often enough and are very apt to carry on our shelves stale, out-of-date goods. The society helps to keep a man 'up to the times' and enables him to refurnish his mental shop with the latest wares. Rightly used it may be a touchstone to which he can bring his experiences to the test and save him from falling into the rut of a few sequences. It keeps his mind open and receptive, and counteracts that tendency to premature senility which is apt to overtake a man who lives in a routine."

Dr. J. H. ten Bokkel Huinink, of Lochen, Holland, has designed a motor lorry which can be rapidly converted into an ambulance. After bringing up stores or ammunition to the lines, a few minutes suffice to fetch out framework and sailcloth from underneath the platform of the lorry and build them up to form an ambulance to receive seven stretchers. In a trial exhibition all this was done in eight minutes.

THE ORIGIN OF THE NASO-ANTRAL POLYP

By D. J. Gibb Wishart, M.D.

Toronto

THE existence of a variety of nasal polyp, owing its derivation to the maxillary antrum, characterized by being confined to one side of the nose, and solitary, and further, extending into the post-nasal space, was first pointed out by Professor G. Killian in 1906.

The diagnosis was arrived at by close observation of some eight cases, in which he was able to detect the pedicle of the polyp disappearing through the accessory ostium of the antrum of Highmore, and was able to insert a hook around this pedicle and demonstrate that there was no attachment to the margins of the hiatus. Prior to this observation, writers contented themselves with the statement that the pedicle in certain cases was attached somewhere in the middle meatus, and probably to the edge of the hiatus.

Killian described the polyp as possessed of a peculiar pear-shaped form, the broad end lying in the naso-pharynx, while the stalk extended some distance into the nose. In the thick part of the polyp was usually a large cystic space, which might be prolonged into the stalk.

These polypi hardly differed from the ordinary mucous variety in microscopical character, the surface of the part within the naso-pharynx was usually pretty firm, of a whitish appearance, and with a flattened epithelial covering. The tissue of the tumour was composed of loose œdematous connective tissue, the cysts taking their origin from large collections within the trabeculæ, and not being clothed with epithelium. Twenty-two cases in all were recorded.

In all these cases, Professor Killian removed the polyp by a wire snare, the loop of which was laid close up to the antral exit, and firmly tightened without cutting through the stalk. The tumour was then torn away suddenly, and a certain resistance was in evidence which he considered to be due to the portion within the antrum being in reality not as thin as it would appear after

Read at the forty-seventh annual meeting of the Canadian Medical Association, St. John, N.B., July 7th, 1914.

extraction, but swollen with cystic fluid inside that cavity. In extraction, this thick intra-maxillary portion ruptured, the fluid falling into the antrum. In no instance does the antrum itself appear to have been opened to observe the growth *in situ*.

Three years after the publication of the above paper of Killian's, appeared a series of observation upon the naso-antral polyp, by Brown Kelly, with notes upon fifteen cases, in eleven of which the antrum was opened, and the connexion between the lining membrane of that cavity and the growth was demonstrated. In seven of these a large cyst occupied the entire cavity, while the lining membrane was polypoid in two, and largely thickened in the remaining two.

It had frequently appeared to me that in the cases of solitary nasal polyp coming under my care, the pedicle disappeared into the middle meatus, and that on more than one occasion a small solitary polyp disappeared as if by magic, between the time of observation and the time set for removal: and upon reading Brown Kelly's paper just referred to, I determined to investigate the antrum itself in future. It so happened that the first case which presented itself was one of those in which I had recorded these very observations.

All my cases were operated upon under general anæsthesia, and the ordinary procedure of a radical antral operation followed.

After the anterior wall was removed, and the cavity cleansed from blood, a wire loop was passed through the nasal fossa, and around the naso-pharyngeal extremity of the polyp, worked up close to the ostium, and then drawn moderately tight. In case three the size of the polyp made it impossible to follow this procedure. The snare was then passed to the care of an assistant.

In no case was it difficult to trace the pedicle directly to its point of attachment to the antral wall, and in but one case was there any cystic enlargement of this pedicle within the cavity.

Usually it lay as a thin band stretched somewhat tightly across the cavity, and could be easily demonstrated by passing a hook around it and exerting gentle traction, when motion was at once noted by the assistant in charge of the snare wire.

The point of attachment was usually very limited in extent, but varied in position, which was, however, generally on the posterior or outer wall near the back.

As soon as the point of attachment was satisfactorily demonstrated, the pedicle was cut away with curved knife or a pair of scissors, and the growth would at once have fallen back into the the pharynx, had it not been retained by the snare. In every case when the growth was brought out through the nose, the eye could

follow the intra-antral portion of the pedicle as it was drawn out through the ostium.

The area from which the tumour had originated was then thoroughly curretted, and afterwards cauterized with a bead of tri-chlor-acetic acid. In one case where the membrane was thickened, and the outgrowth of several polypoid buds evident, the curettage was more extensive, but the area was never larger than half an inch in diameter, and usually half that size. In no case was there any attachment to the margin of the ostium.

The naso-antral wall was not removed, even partially, in any instance, no packing was inserted, the gingival flap was laid in place, and retained by a frequently changed gauze pad, laid under the lip.

Further, in no instance has there been any tendency to recurrence, although in several the tumour had been previously removed more than once.

Brown Kelly drew attention to the fact that transillumination fails in these cases to give any indication of the presence of the tumour origin in the antrum, and it will be noted that the same note is made in my own, wherever the test had been recorded. As the intra-maxillary portion of the tumour in my cases was not cystic, this is not to be wondered at, but I would refer those of you who are interested in this feature of the etiology to Brown Kelly's paper for an interesting discussion of the cause of the non-appearance of the shadow, where the intra-maxillary portion of the growth occupies the larger part of the cavity.

I have quoted freely from Killian's account of the appearances and intimate formation of this variety of innocent nasal tumour, and nave nothing further to add, except that those specimens of my own which were examined by the pathologist agreed with his conclusions.

Why do these growths arise from the antrum membranes? I have no satisfactory view to offer. St. Clair Thompson "inclines to the view that pathological secretions of all kinds in the nose are the chief immediate cause of these inflammatory hypertrophies". Phillips states that "a history of previous attacks of purulent sinusitis is obtainable".

These cases of mine would not favour either of these views, for the situation of the attachment except in one instance was far above the reach of pathological secretions, and in none was there any history or evidence of purulent sinusitis. The number of cases as yet on record is far too few to enable any adequate theory of the causation to be built up, and while there is no history of

return in any of the cases cited by Kelly or myself, where the antral cavity was opened, it is too soon to assume that further growth will be prevented by this method of removal. For myself I shall persevere, and open the antrum in every case of solitary nasal polyp with pedicle disappearing into the middle meatus, where I can secure the consent of the patient.

Case No. 1. Mr. L. H. H., aged twenty, was seen first in 1906. At this time he had suffered from left nasal stenosis for two years, and had had a polyp removed from the same side two years prior to that. A large bilobed polyp was found filling the naso-pharynx, which was removed under general anæsthesia, and proved to be the size of a pigeon's egg. Three months later I discovered another polyp in the same side of the nose, coming from the back of the middle meatus. As he was just going upon his holidays, removal was postponed till his return, when no trace of the tumour could be found.

Four months afterwards, a polyp was again discovered in the left posterior fossa, and in tracing its pedicle, the probe entered the antrum. This was at once removed by snare.

Three years later the nasal stenosis recurred, and having read Kelly's paper, I determined to open the antrum. The pedicle was found attached to the outer side of the posterior wall. This was removed in the usual way, and since then (four years) there has been no return.

Case No. 2. Master T. P., aged eleven, was seen in the Toronto General Hospital in 1913, complaining of difficult nasal breathing and snoring at night. It was stated that polypi had been removed from both sides of his nose about one year previous. A large cystic polyp, with several lobes, was found filling the posterior right nose, and naso-pharynx, with a pedicle passing into the middle fossa.

The antrum was opened and the pedicle found attached to the wall (the location is not stated), and removal was effected in the usual way.

Case No. 3. Miss L. P., aged ——, was seen in the Toronto General Hospital in 1912. The history of symptoms and previous treatment is not stated. A very large tumour filled the naso-pharynx, too large to pass through the nasal fossa. A mouth gag was inserted, so as to make it possible to seize the growth quickly through the mouth.

Upon opening the antrum, "a band was seen extending from an accessory opening in the naso-antral wall in the posterior-inferior position, parallel with the posterior wall to a point of

attachment on the posterior-superior aspect of the outer antral wall.

This band was cut away with a curved knife, and at the same time the tumour was seized through the mouth with a pair of forceps, and as it was drawn out, the intra-maxillary band was seen to slip out through the accessory ostium. The affected area was treated as above.

Case No. 4. Miss J. H., aged twenty, seen 1914, complained that weight in nose causes difficulty in talking. Had a single polyp removed seven years ago in Glasgow, and again last year in Toronto. A solitary polyp was found filling the right nasal fossa posteriorly, and occupying half the naso-pharynx, and proceeding from the middle meatus. Transillumination was quite negative.

The right antrum was opened, and the root of the polyp easily seen attached near the root of the second bicuspid.

The pedicle had a small attachment, and was quite thin. It was detached with a curved knife, and the tumour brought out through the nose.

The two following cases belong probably to the same classification, but the antrum was not opened.

Case No. 5. Miss A. B., aged forty-one, was seen in 1907. She complained of right nasal stenosis of eight months standing, accompanied by severe frontal headaches, for which no refractive error could be detected. Transillumination was quite negative. A large bluish coloured tumour was discovered filling the right nasal fossa, and blocking two-thirds of the choana, with a pedicle leading up into the middle meatus. When the patient returned for operation next day, she stated that ever since the examination of the day before, there had been a constant leaking from the affected side. In preparing to snare the growth, a marked discharge of fluid of a yellowish colour was noted, with a corresponding shrinkage in the tumour. This when removed proved to be a solitary polyp with several small cysts attached. There is no history of any return.

Case No. 6. Miss D. L., aged thirty-three, seen 1914, had suffered from a cold in the nose for two weeks. Transillumination negative. There is a single bluish tumour lying in the right naso-pharynx, half filling same, which is traced into the right middle meatus. Three days later the patient came in saying that something had broken in her nose, and a flood of fluid came down into her mouth, staining the handkerchief a light yellow. On examination a collapsed thin sac was seen lying on the right soft palate, and in six days this had completely disappeared. I fully expect this will return, and require eradication through the antrum.

DERMATOLOGY AND THE GENERAL PRACTITIONER

By William S. Walsh, M.D.

Providence, R.I.

GIVEN a case of pneumonia, for instance, and one of a chronic disease of the skin on which to build a medical reputation, it is safe to say that the average practitioner would unhesitatingly choose the former, for there is scarcely a branch of medicine in which he so recognizes his limitations as in the field of dermatology. And in truth, science has made but little advance in the latter realm. While we must acknowledge that some progress has been made in regard to the etiology, diagnosis and treatment of some of the dermatoses, the number of cutaneous disorders with unknown causes is practically as numerous as those whose etiology is definitely established, and while our diagnoses are, in the majority of cases, positive, our therapeusis has made no giant strides. For instance, consider psoriasis. Known as "pearly leprosy" at the dawn of the Christian era, the only finding of value since that time in reference to the disease has been the discovery of chrysarobin by Balmano Squire, and chrysarobin possesses decided disadvantages, and is of only temporary usefulness. Concerning its cause we know practically nothing. The present day treatment is about the same as it was a century ago. Vegetarianism, so warmly advocated by many dermatologists of the day, was recommended as far back as 1840, if not previous to that date, and in old and almost forgotten medical scripts we find mention of practically all the remedial agents we now employ in an unsuccessful attempt at eradicating the disease.

As it is with psoriasis, so is it also with many others of the chronic dermatoses, and it is no wonder then, that the busy doctor is lukewarm in his estimation of the science and disinclined to treat its stubborn diseases, preferring to devote his time and attention to other branches about which more is positively known, and where his therapy is productive of results, appreciable and gratifying to physician and patient alike.

Received for publication, September 22nd, 1915.

But in spite of its many unfavourable prognoses and, at present incurable diseases, dermatology is a science worthy of respect. The reason more advances have not been made is, in a great measure, due to its lack of weighty consideration, particularly by the medical colleges. The ordinary courses in skin vary from thirty hours to sixty hours of study during the four years of medical education. It is impossible to conceive how even a foundation can be built in such a short space of time. It is true that no attempt is made to teach the subject thoroughly, and that only the common diseases of the skin receive much attention. Yet there are innumerable so-called common diseases, any one of which requires for its intelligent understanding, as much time as is given to any one important disease in neurology, pediatrics, medicine, etc. In short, the student is graduated practically a stranger to dermatology, unable always to make a diagnosis of its simplest diseases, unfamiliar in differentiating a serious from a minor malady, and wholly at a loss in instituting effective treatment. Ranked as a minor subject by the college authorities the student fails to realize its importance, for he can fail in it and still graduate. Minor it may be, inasmuch as its diseases rarely kill, but if they do not kill the body they kill the joy and happiness, and make life almost unbearable for a goodly number of its afflicted.

If a thorough knowledge of the subject is to be obtained, and therapeusis and advance depends on such a knowledge, more time and consideration must be devoted to it by the medical colleges. Instead of relegating it to the minor class, it should be made a two year study and a major subject. Probably with the trend of the times as the ordinary four year course becomes lengthened, instructors may find it feasible and possible to do so without crowding their already crowded curricula.

The cause of the general practitioner's many therapeutic defeats in his treatment of the dermatoses, is largely because he is so prone to regard the disturbed states of the skin as purely local processes, whereas, save possibly for the parasitic diseases, practically all skin diseases are local manifestations of a perverted metabolism, and so, in reality, are not diseases but symptoms. The Biblical injunction, "Seek and ye shall find," should be taken to heart by anyone who undertakes to treat a diseased skin, for, in a majority of cases, a careful examination will reveal some pathological internal disturbance, the correction of which will be salutary, if not in curing the affliction, then in diminishing its intensity and in rendering local treatment more efficacious. The necessity of

routine examination of all chronic skin sufferers presenting themselves for treatment, is readily appreciated by the scientific physician, for it is to him a common occurrence to find in disturbed states of the system etiologic factors in the production of both common and rare dermatic troubles. For instance, abnormal states of the nose, the eyes, mouth, stomach, liver, kidneys, etc., are often exciting causes of acnes, eczemas, furunculoses, erythemas, urticarias, or may produce lesions that conform to no well recognized type of skin disease. A mere reference to dermatological literature will support the above statement. Why the same body disorder should not always manifest itself by producing typical lesions we must confess not to know, save theoretically. Nor can we explain why the disturbance that produces a skin disorder in one person does not produce it in all suffering from that identical error of metabolism, save that the skin of those affected is predisposed to attacks of disease by reason of a hereditary or acquired weakness of resistance. It may be well to note here that the derangement of the skin is often the predominating and sole complaint, even though well marked organic disorder exists, whereas, in others, with no skin involvement, the same perversion is causative of severe subjective sensations,—a quite weighty reason, to my mind, why most affections of the skin are to be looked upon as symptoms and not as diseases, *per se*.

Apart from regarding diseases of the skin as purely local processes, there are other fallacies from which the practitioner needs to free himself. It is surprising how many of the profession still cling to that antiquated belief that "bad blood" is the cause of most skin disease. That notion has served many a time to hide ignorance as to the etiology of skin maladies, and is readily accepted by the laity, as proved by the sale of so many patent "blood purifiers". What "bad blood" means is a question. If it mean the circulation in the blood stream of poisons generated by abnormal functioning of various organs, then it may be adhered to, but to consider derangements of the blood, *per se*, as being causative factors of skin eruptions is wholly erroneous. The true blood diseases are rarely, if ever, accompanied by skin eruptions, and agents that act either primarily or secondarily in ridding the blood stream of toxic material are impotent in curing the dermatoses.

The idea that acnes are a result of "secret vice" is not, fortunately, receiving much credence from the profession in general. Menstrual disturbances are, it is true, capable of exciting some acnes, as will be attested by many women, but that covert practices have

anything to do with the disease is an unjust, wicked, and unfounded notion. The advice sometimes given to young men suffering from acne to seek carnal pleasure for the cure of the trouble is not only most inane, but it subjects those who obey the quackish injunction to the possible contraction of disease much more serious than the acne.

Another unscientific practice of some physians is to prognosticate the disappearance of certain skin eruptions with the course of time, without the necessity of employing remedial agents. This unworthy prognosis is often given to acne sufferers particularly, and, if given, is an index of the ignorance of its giver. It does often happen that an acne will disappear of itself, but it may not do so until ten, fifteen or more years have transpired, and think of the mental state of those afflicted during that time, when by intelligent treatment by the most ordinary of ordinary physicians the disease can be cured!

That it is unwise to cure a disease of the skin lest it cause internal disturbance, maybe death, is not now very tenable. The older dermatologist waxed warm in this belief, and gave many instances of death caused, it was claimed, by the removal of such a disease as eczema for instance. In a dissertation "On the connexion between Cutaneous Diseases which are not contagious and the Internal Organs," by Usher Parsons, a Boylston prize essay for 1830, such cases are reported, but that the cure of the skin disorder was not of itself the cause of death, and that the reported deaths could have been explained by more weighty arguments had the attending physicians gone deep enough, seem most worthy of belief. Darwin long ago reported three cases of chorea caused, he stated, by the cure of a "psora," and which were immediately removed by a reinoculation, and in Shattuck's prize dissertation we find the report of a Dr. Fay, who, called upon to attend two negro children suffering from pediculosis corporis had them placed in the warm bath and scrubbed with soap. It was claimed that the sudden deaths of the children after this simple procedure were due to the rapid removal of the lice, plus the warm water. If these cases hide nothing there seems to be some reason for concern in rapid cures of dermatic diseases. But we are curing the same diseases day in and out without having brought to our notice so forcibly such clinical dangers, and so there is no plausible reason why we should have any misgiving whatsoever in removing any skin disease we may be called upon to treat. Since the lesions of the skin are in many diseases, so-called, but symptoms of a more important underlying disorder, it may prove

unwise to devote all our attention to the skin, for in that way harm may be done the inner organs, as the toxins producing the skin disorder, no longer able to effect an exit through the skin, may prove to be detrimental to the other organs of elimination which are not properly functionating, as is evidenced by the skin disease. This caution is, however, of but minor importance, for in contradiction to it apparently, there are numerous cases cited of nephrites due to extensive skin disease.

There are a number of useful hints as regards diagnosis and treatment of the dermatoses, garnered from the experiences of many keen observers, which may prove of value to the general practitioner. These I append, but while they are trustworthy in the majority of cases, they are to be used as aids and are not intended to take the places of routine examinations.

1. When called upon to treat a disease of the skin, the etiology of which is uncertain, make a complete examination of your patient. Examine the scales of the scaly diseases in liquor potassæ for spores, etc.; do a Wassermann if at all suspicious of lues, or employ the therapeutic test. To differentiate benign from malignant growths, and to diagnose luetic, tubercular, or other similar diseases, the microscope is often necessary. There is no disturbance of the system so simple that it may not be the cause of a skin disease. If you are unable to find an etiologic factor, if expense is no consideration, have your patient's various organs examined by specialists.

2. Occupation is a question that should always be asked. Bakers, cabmen, florists, chemists, photographers, etc., often suffer from skin diseases attributable to occupational irritations. Furs, hair dyes, cosmetics, etc., may prove the cause. The heat of the sun may produce ephilides; the heat of the fire pigmentation of the shins in elderly persons.

3. Drugs cause rashes,—their eruptions resembling practically any form of cutaneous disease. Your own prescriptions may be at fault, for almost any drug in the pharmacopeia can cause skin manifestations in susceptible subjects.

4. Ointments applied over scabs or scales are inert. See that the scabs or scales are thoroughly removed before application of remedial external agents. If your ointment is gritty it may aggravate the disease. It is better to begin with lotions or ointments of weak strengths, gradually increased, than with primary strong applications.

5. Arsenic is never to be given in an acute disease of the skin.

If results are to be expected from its use they usually manifest themselves within two weeks.

6. Lues and eczema constitute 65 per cent. of all the diseases of the skin. Therefore these two diseases are always to be kept in mind. Lues can simulate almost any skin disease. If in the least doubt have a Wassermann done. Psoriasis-like, and eczematoid lesions on the palms of the hands which do not respond to local treatment are usually syphilitic. Pustular lesions in an adult should always suggest lues; eruptions appearing in peculiar situations are to be regarded in like manner.

7. Snap-shot diagnoses are to be avoided. Make a physical examination of your patient at frequent intervals. Two diseases may exist in the same patient at the same time, viz., psoriasis and syphilis which occasionally look alike.

8. Pustular lesions at the base of a child's head point to pediculosis capitis. A bald patch on a child's head is generally ringworm. Scabs on the ears, matting of the ears, suggests eczema. The eczemas of children are most often metabolic in origin. Discrete pustules and scabs on a child's face and hands, a history of other cases in the same family, point to impetigo contagiosa.

9. Unilateral acneiform eruptions on the face may be due to spurs on the septum nasi. Acne about the chin in women is generally due to menstrual disturbances. Eczema about the eyes may be caused by errors of refraction. Eruptions on the forehead are often secondary to disease of the scalp. Scratching of the head, scratch marks on the back, prurigo in old persons, are suspicious of pediculosis, even in the best of families.

10. Warty like lesions on the lower eyelid, as well as in other parts of the body, surrounded at the edges by small abscesses may be blastomycosis. Ulcers that heal, only to break down again are probably epitheliomatous. Ulcers on the arms and outer sides of the legs are generally luetic. Bi-lateral ulcers suggest lues.

11. Take the temperature of all skin patients. By this means error is avoided and diagnoses often aided. The exanthemata, erythema nodosum, secondary lues, etc., are accompanied by fever. Belladonna rashes, which resemble scarlet fever, all drug rashes and chronic diseases have no fever generally.

12. A history of similar cases in the same family, vesicles and pustules symmetrically distributed on parts where the skin is thinnest, as the flexor surfaces, axillæ, flanks, genitals and thighs, which itch at night point to scabies. Scabies does not invade the face. Tinea circinata and tines tonsurans are rare in adults.

13. Acanthosis nigricans is suspicious of cancer of some abdominal organ. Disturbances of the ductless glands produce skin involvement, as the bronzing of Addison's disease. Lues has a raw ham colour; lichen planus a violaceous colour; lupus tubercles resemble apple jelly; favus is sulphur yellow; parasitic diseases and hyperkeratoses are brownish; tinea versicolor is chamois coloured or brownish; psoriasis has pearly scales over bleeding bases, etc.

14. Inflammatory patches, symmetrically situated on the thighs and perineum, with well defined margins is suspicious of ringworm. Eruptions present in only one place are apt to be due to local causes; generalized eruptions, as well as symmetrical eruptions, to systemic disturbances.

15. Scars on the legs of persons under thirty or a single scar on the forehead, when not due to traumatism, are usually luetic. The scars of varicella and variola are circular pits about the face; luetic scars are large, oval or circular, and appear most often on the legs.

ACCORDING to statistics compiled by the Registrar-General, 12,414 deaths in the United Kingdom were caused by measles during the first six months of last year. The Army Council also reports that this disease is the cause of much disablement amongst the troops.

THE first number of *Eugenical News* has just been issued by the Eugenics Record Office, Long Island, New York. It begins as a four-page leaflet and will be published twice a month. The subscription fee is twenty-five cents for six numbers.

TREATMENT OF SQUINT

By J. A. MacMillan, M.D.

IT is my intention in this brief paper to confine myself entirely to the operative treatment of convergent strabismus. During the past few years I have seen so many poor results following tenotomy and such excellent ones following advancement that I should like to submit for consideration by the members of this section the advantages which it seems to me the latter operation holds over the former procedure.

The operative treatment of strabismus begins after other measures have been carried out, that is, after refraction and orthoptic treatment. The first, of course, is always done; but, unfortunately the latter is almost impossible except in private patients who can afford the employment of a competent person to carry out the work.

Before taking up the strictly surgical aspect of the question let me say a few words in regard to the proper course to be followed in the care of these cases. There seems to have been a common belief among our predecessors that cases of strabismus should be left alone until about the age of ten or twelve, owing to the fact that the squint occasionally would disappear during that time.

We even find in Fuchs' the following statement: "Since strabismus in some cases, though rarely, diappears of itself, as the child grows older, it is best to delay operation until the child has passed the age of ten, for if we should perform early tenotomy in such a case which tends to get well spontaneously, a divergent strabismus would subsequently set in." But according to our present knowledge of the subject, we know that this is certainly not the wisest course to adopt. It has become well known that the fusion faculty is practically developed at the age of six. Now, if we wait until the age of ten to carry out our treatment, with the hope of spontaneous recovery, we cannot expect to obtain binocular single vision. We can easily correct the deformity at any age; but that does not by any means constitute a cure. A cure implies

---

* Read at the annual meeting of the Canadian Medical Association, St. John, N.B., July 7th, 1914.

the maintenance of parallelism through the establishment of binocular single vision. From this we see that it is absolutely essential that we begin our treatment as soon as possible. We can, with a little patience, refract children as early as eighteen months, which, followed by atropine in the non-squinting eye, or a bandage over the same eye, will very frequently suffice in itself to cure the deformity. If such does not happen, and fusion training cannot be carried out, as is the case in at least all clinic patients, I believe after three months we should operate.

There is at our disposal tenotomy or advancement, and the consideration of the surgical treatment resolves itself into weighing the relative merits of the two operations. In my opinion tenotomy has no place in the treatment of convergent strabismus. For in this operation we sever the connexion of an eye muscle to the eyeball, and make no provision for the reattachment. It may slip back but a short distance and by good fortune become adherent to the sclera; this accounts for the occasional good results following the procedure. But, as is much more often the case, it retracts far back before coming adherent, and here we can have one or two conditions happen, either the eye will remain straight for distance, but convergence will be greatly crippled, making the establishment of binocular vision absolutely impossible, or the eye will diverge. A third result, which is the most disastrous of all, may occur in the fact that the muscle may not become attached to the sclera at all, but will become united to Tenon's capsule. In this case we have the effect of an absolute paralysis. That the first mentioned result occurs but rarely, I am forced to believe, as I have seen a great many cases after tenotomy, and have invariably found convergence greatly weakened. From these reasons you can see that the practice of tenotomy is at its best questionable, often with chances against the operator.

Further, the falling in of the caruncle has been noticed by every one doing eye work, and not rarely do we see some degree of exophthalmus. These deformities I will admit are of less importance, but I think they are worthy of mention.

The ease with which the operation is done is the one point in its favour, and is undoubtedly the reason why it is still being performed.

Now compare with the above results our findings after advancement. Here as convergence is not interfered with, we cannot expect to find divergence follow. Advancement leaves no deformity apart from the slight retraction which we find often following the

single operation; but it is so slight that it can certainly not be called a contraindication. It is more difficult and tedious to undertake, I will admit, but even this is greatly overcome by following out the method which will be described later.

It seems to me as there are absolutely no bad results following advancement, it is the only operation to perform for convergent strabismus, and that there is no reason why it should not be carried out as early as possible in the interests of binocular vision. I will, therefore, repeat what I have said above, that I believe after refraction has been done, and orthoptic treatment carried out, for a period of time, say three months, advancement of one or both external recti should be done. We certainly have nothing to lose on the one hand and everything to gain on the other.

But it may be asked what is to be done in those cases where double advancement has been done and convergence remains? Here I believe the failure is due to faulty technique or slipping of the sutures. For in my opinion there is no degree of convergence possible that cannot be overcome by an energetic advancement of each external rectus. In such a case I think it much more advisable to re-advance the retracted muscle up to the limbus than to do a tenotomy of the opposing muscle.

I have purposely left tucking and resection to the end, as I do not believe they have any effect unless associated with tenotomy of the opposing muscle. The value of advancement is due to the increased leverage produced by bringing the insertion up to the corneal margin, and not to the amount of muscle excised, and I agree with Wootton that the only reason for re-secting a piece of muscle is to make up for its loss of tone.

Now, coming to the operation itself,—perhaps the most commonly performed advancement in the present age is Worth's. It is undoubtedly a good one; but I believe that Wootton's modification of the Landolt operation is better. A full account of it is to be found in Knapp's *Archives of Ophthalmology*, Vol. 30, No. 3, 1901. An incision is made to the conjunctiva about one mm. from the limbus, and parallel to it, extending from the lower level of the cornea to the upper, its whole length being about one-third the circumference of the cornea. The conjunctiva is then dissected up, well over the whole outer part of the globe. A small opening is now made through Tenon's capsule, at the lower border of the muscle, and a tenotomy hook is inserted under the tendon. Another opening is made through the capsule over the end of the hook. A second hook is inserted farther back, from above downwards,

and is pushed back, leaving about a quarter to a half an inch of muscle exposed between the two hooks. Now two double arm sutures are inserted just in front of the posterior hook, the upper one including the upper third of the muscle, the lower one the lower third. The muscle is then divided between the two hooks at such a distance as is regarded necessary for the loss of tone. Then the tendon is excised from the globe. Now the middle suture, a single arm one, is passed through conjunctiva and the middle of the muscle. The next step consists in passing the sutures through the sclera. This is done as near the limbus as is possible, and is always parallel to the limbus. A better bite of sclera is so obtained with less likelihood of entering the anterior chamber or injuring the cornea. The middle one is inserted first, then the upper and lower. The needle in the last two coming out at about the end of the conjunctival incision. Now an assistant with a pair of fixation forceps gripped over the internal rectus pushes the globe to the temporal side while the stitches are being tied. The middle one first, a surgical knot being used on all three, with a second one on the middle. For the upper and lower sutures after the surgical knot is tied one of the needles is passed through the conjunctiva and this is then included in the second knot.

I think this operation is better than the Worth, because there is no conjunctiva excised, and in making the scleral sutures, the sclera is bare, and a better view of all can be obtained. We can therefore be more certain in getting a good hold of the sutures in the sclera.

I have seen this operation performed many times, and have frequently done it myself, and have seen no ill-effects follow it; while the ease with which it is done, together with the lack of deformity following, makes me feel that it should be more generally in use.

THE doctors' wives and medical women of New South Wales have given a motor ambulance to be used in connexion with the Australian base hospitals.

STATIC JOINT DISEASE

By J. Appleton Nutter

Montreal

By static joint disease is meant the affections of a joint mechanically unfit, that is in which the joint's weight-bearing or pressure-bearing function is mechanically abnormal. Static joint disease, therefore, principally concerns the lower extremity.

We must consider the lower extremity as a static unit divided into four parts—foot, leg, thigh and pelvis. These are the four segments of a column which supports a load,—the trunk. A disturbance in any one of the four parts (as for example the sinking in of a pronated foot) will have its effect upon the whole column.

Let us consider, then, the effects of a pronated, commonly called flat, foot upon the whole lower extremity. As you all know a flat foot is always everted. The patient with flat feet toes out tremendously. This, of course, means that the entire leg is rotated outwards. As a result all the knee ligaments are strained and pulled upon abnormally, causing the well-known ache at the knee associated with flat feet.

Of all the ligaments at the knee the internal lateral suffers the most. The reason is that the foot has had its inner arch broken down in the course of its pronation. This has the effect of giving the knee a tendency to become knocked, and we all know how frequently the combination of knock knees and flat feet is seen in children. As this tendency to the deformity of knock knees has to be resisted valiantly and persistently by the internal lateral ligament it can easily be understood that this ligament undergoes a great strain,—much greater than it is normally called upon to bear. As a result a flat-footed patient commonly complains of tenderness over the inner aspect of the knee joint, and putting the internal lateral ligament on the stretch by forced abduction of the leg will cause pain.

Nor is this all, for the outward twist of the lower leg causes what is known as joint incongruity. Joint incongruity is where parts of an articulation, which normally should be touching, are no longer in contact but articulate with other portions of the joint.

At the knee this will be shown in an *x*-ray by the fact that the femoral condyles do not rest exactly and accurately upon the top of the tibia. If the tibia is rotated externally, the lateral or outer condyle of the tibia will be seen to protrude beyond the femoral condyle. If twisted internally, the mesial or internal condyle will be felt and seen extending inwards beyond its normal limit.

Now we all know that our knees are not meant to be twisted, so that long continued rotation here is bound to be followed by bad results. The soft parts around the joint will be stretched and strained, and the nutritive vessels running into the articulation by way of the capsule will probably be compressed. The blood supply will, therefore, be diminished, and degeneration is likely to occur in the course of time, hence we see plainly that joint incongruity is not at all a desirable thing to have. I might add that in course of time it will be found that lipping or osteo-arthritic deposits will appear at the joint edges covering over the protruding and bared joint surface. This is evidently an attempt made by nature to restore joint congruity, and is to be regarded as a step in the process of repair. But enough of the knee.

We have said that the whole leg is rotated outward in flat-footed people. This means that the femur also is twisted outward at the hip. If we are so fortunate as to possess a perfectly shaped pelvis, such rotation need not alarm us. Most of us, however, have variations in our pelvis, and a very common one is to have an acetabulum, the axis of which points too far forward and not enough laterally. With an acetabulum the axis of which is directed too far forward the disadvantage is as follows. When the femoral head is rotated outwards by the flat foot a large part of the ball comes out of the socket and protrudes anteriorly. The acetabulum in consequence rests very insecurely upon the posterior part of the femoral head. What is the result? The result is that to obtain greater security the pelvis is tilted far forward, the socket thus covering the ball completely and giving greater stability. But note the effect of this greatly increased pelvic inclination. To assume the upright position the patient walks with a hollowed-out back. He strains his lumbar and sacro-iliac ligaments, he complains bitterly of backache and is treated for lumbago! His feet may not cause the least pain, though markedly flattened and everted; he may not know there is anything wrong with them, but nevertheless they are the cause of his backache; obviously aspirin massage and a hot water bottle could not in such a case be considered as getting at the root of the matter.

Without going into the matter further it might be pointed out that many cases of limping in children may be attributed to a pronated foot. In this way hip disease may be simulated. In fact, the foot may be the direct cause of static joint disease in the hip, with tenderness, definite limp from the hip, and limitation of motion. The dreaded tuberculosis of this joint could hardly be simulated more closely. Remember, however, that the limitation of motion will not be equal in all directions, as it is in hip disease.

Why do so many people complain of pain and tenderness in their great toe joints? It is not all gout, I can assure you. Many of them suffer from flat feet and as a result of this deformity, walking throws an unnatural and overwhelming strain upon the great toe. The strain is increased by the use of narrow-toed shoes. Hallux valgus is produced and a painful bunion develops. Joint incongruity is caused by the hallux valgus, and after a time osteoarthritic deposits appear at the joint line to cover the bared joint surface. Lipping later becomes easily palpable.

The origin of all this is in many cases not infective but mechanical. Definite rheumatoid or, as some prefer to call it, traumatic arthritis may develop from a purely mechanical cause. It may arise in the knee or hip or spine as the result of a flat foot. Let us remember that the first step in the process of static rheumatoid disease, or traumatic arthritis, is deformity in one part of the static unit.

The second step in the formation of static joint disease is seen when other joints show strains of the capsule, with pain and joint incongruity. The third and last step is where degenerations and osteoarthritic deposits mark true rheumatoid disease—or as some prefer to call it, arthritis deformans.

We have, as it were, been working from bowel upward. Let us now begin at the pelvis and work down.

The changes caused by rickets are probably the best known of all skeletal deformities. The rickety pelvis is told by the flaring apart of the anterior superior spines and the diminished distance from the pubes to the promontory of the sacrum (the true conjugate). In a normal pelvis the anterior superior spines are not nearly so widely separated as are the more posterior portions of the iliac crests. The rickety pelvis is, as it were, pressed upon from the front, driving the pubes back towards the spine. The acetabula are thus driven back until they lie directly underneath the spine instead of in front of it. In addition they show the axes directed abnormally forward.

Let the head of a femur be now fitted snugly as far as it will go into the acetabulum of a rickety pelvis. You will notice that with the head deeply in the socket the condyles are rotated far inwards. Try to rotate the femur so that it is directed forward and you will see that the head almost leaves the socket anteriorly. In consequence the possessor of a rickety pelvis generally walks toeing in, and also arches his back, both being manoeuvres to secure stability at the hip joints. This is very frequently seen in children at a hospital clinic.

The rickety femur usually shows coxa vara or lessened inclination of the neck. The femoral head and neck, moreover, are usually directed backward more than is normal. This latter, called retroversion, to a certain extent makes up for the malformation of the acetabulum. Retroversion is, in fact, nature's effort to make up for pelvic deformity. By retroversion of the femoral neck, hip stability can be secured without quite so much internal rotation of the leg.

At the knees one expects to find joint incongruity due to the patient's efforts to keep his feet directed forwards. In addition we may find knock knees or, in the tibiæ, bow-legs. This consideration of rickets may help to explain how it is that so many rickety children walk with hollow backs and bow legs and feet toeing in. They at least do not often suffer from backache, but let their deformities persist until adolescence brings increased weight and a different tale will be told. The arched spine will cause aching muscles, the exaggerated inclination of the pelvis will tend to separate the sacro-iliac joints and the strained knees will cause pain. If knock knees are present, flat feet will be almost sure to be seen.

Another variation from the normal is called by Preiser, of Hamburg, the "stand pelvis" (as it is considered to be an adaptation to the upright position). It is said to be present in 60 per cent. of all persons and develops in young adult life. Its principal interest to us to-night lies in the fact that the acetabula are placed far back, just under the spinal column. For this reason the great trochanters are always above Nélaton's line though no coxa vara or other hip deformity exists. The conjugates are larger, but the pelvic outlet narrow.

As the anterior direction of the rickety acetabulum forces the leg into internal rotation, so in contrast the laterally directed acetabulum of the stand pelvis tends to rotate the leg outwardly for stability's sake. Outwardly rotating the leg brings the femoral head more securely into its socket. For the same reason (stability)

the pelvic inclination is lessened. There is compensatory antetorsion at the femoral neck, shown by increased prominence of the lesser trochanter in *x*-rays.

The most important part of this, however, lies in the fact that the patient showing a stand pelvis has a marked tendency to outward rotation of the legs. The prolonged twist will eventually tell upon his knee joints, and joint incongruence here will be followed by osteophytic lipping and typical rheumatoid changes. Long before this arrives, however, his feet, from being held in an everted position, will have become flat. The reason for this is simple. When the feet are everted the weight of the body, transmitted through the tibia, bears directly upon the inner side and longitudinal arch of the foot. As we know this arch was never meant to support the body, but is to give elasticity to the gait. Under the abnormal pressure caused by an outwardly rotated leg, the feet will first give away outwards (become pronated) and later there will be in addition actual flattening of the arch.

Now let us take a few cases and examine them. Patients with aching pains in the calves of their legs usually show pronato-valgus or flat feet. The aching is caused by muscle strain, and may be due to overstretching of the muscles which support the arch or to spasmodic action of the peronei in their effort to pronate the feet. The latter seems the more common.

Painful knee joints are often associated with flat feet, and tender points usually are found over the internal lateral ligament. Effusion and crepitus may be found if the case is of long standing.

Rheumatoid arthritis of the hip may be found associated with both the rickety and the stand type of pelvis. Joint incongruence here leads to arthritis just as at the knee.

Pains referable to the sciatic and anterior crural tracts are common symptoms of hip trouble. The hip is supplied by both, hence pain is referred to their distribution. As, however, such pains are also found in connection with vertebral lesions it is important to be able to distinguish their true source. Rheumatoid disease of the hip is usually shown by limitation of motion, tenderness over the femoral head and evidence of rheumatoid elsewhere. Where an *x*-ray shows changes the disease has probably lasted several years.

Backaches are frequently caused by static trouble in the lower extremities. One interesting type is found in pregnant women when the prominent abdomen places too great a strain upon ligaments already weakened and softened. Often the feet are seen to

be at fault. If these be corrected and support given to the spine in many cases the pain will disappear.

Sciatica, flat feet, hip and vertebral rheumatoid disease are seen only too frequently together. Is the source of the trouble above or below, in the hip and spine or in the feet? The pain is sure to be secondary. A correct diagnosis is here of the highest importance.

When the case has gone on to actual rheumatoid disease local treatment will, of course, be necessary, such as massage, passive motion, heat, etc.

How many wonderful cures of so called tuberculosis of the hip have we not seen! I saw only to-day a little girl of thirteen who complained that her hip was causing some pain. Her history showed that she had been treated for years by spica and crutches for tubercular hip disease. Inasmuch as she now shows no limp, only a trace of thigh atrophy, no shortening and normal range of hip movement, I feel sure no hip tuberculosis ever existed. She has, however, well marked pronation of her feet, and this has probably started all her trouble.

Static joint disease is also shown in the painfully relaxed knees seen where the hip is ankylosed. A patient who has a stiff hip from any cause must throw additional strain on the knee ligaments and these will be sure to complain.

Then, again, how often our patients with old fractures of the neck of the femur, or old cured hip disease will complain of recurrence of pain in the groin. Where actual disease has previously existed here, particularly in the case of tubercular disease, we are apt to imagine there is a return of the old trouble. In many cases, however, the pain is due simply to overstraining of a statically weakened joint. The condition, if persisted in, will lead to typical rheumatoid arthritis. Such disability also may occur in congenitally dislocated hips, reduced or unreduced, especially when the patient has attained adult years. That it is not more common in childhood is obviously due to the fact that a child's lighter weight is not sufficient to produce serious joint strain.

I might mention in closing the common complaint of pain and stiffness in the back of the neck and between the shoulders. This is a region of the spine which bears most of the weight of the upper extremity. We often find that round or stooping shoulders are at fault, by putting an abnormal strain upon the rhomboids and trapezius, and through them upon the spine itself. Baking and massage if combined with the over-erect posture, holding the

shoulders well back, will usually have a good effect. Sometimes a shoulder trace is necessary. Naturally enough anything like constipation, sore throat, etc., will need attention. By putting the shoulders far back the increased strain is taken away from the vertebral column and the tired and aching muscles have a chance to rest.

The importance of the mechanical, as opposed to or in conjunction with the infective, element in the production of joint disease has, I hope, been shown in this brief paper. The inference is that in all joint disease, not definitely of an infective origin, a careful search should be made for evidences of mechanically improper joint action. Remedying this will in many cases cause the joint symptoms to disappear.

THE Alvarenga Prize for 1915 has been awarded to Dr. J. E. Sweet, of Philadelphia, for his essay entitled "The Surgery of the Pancreas." The next award will be made on July 14th, 1916. Essays intended for the competition must be received by the Secretary of the College of Physicians of Philadelphia on or before May 1st, 1916.

THE Princess Christian Red Cross Hospital at Englefield Green, near Windsor, England, was opened a short time ago. The hospital has accommodation for one hundred and twenty wounded, six pavilions of twenty beds each. The British Red Cross contributed $50,000 towards the unit, the remainder being collected by H.R.H. the Princess Christian.

NOTES ON CORTICAL LOCALIZATION

By Geoffrey Jefferson, M.S. (Lond.), F.R.C.S. (Eng.)

Victoria, B.C.

UNTIL the year 1870, it was generally believed that the cerebral cortex was inexcitable to electrical stimuli, that all parts of it were in fact of equal value, and that no definite part could be pointed to as the seat of any special function. In the year named Fritsch and Hitzig demonstrated electrically the motor area of the dog's brain and inaugurated a new era of cerebral research. It is the writer's intention to give some account of the many advances that this subject has made during the past fifteen years. In place of the few rather hazily outlined areas of earlier days, the advent of the microscopical survey has given us a cortex mapped out into upwards of forty distinct histological areas, each one of which is probably different in function.

The investigation of the various areas of the brain by means of electrical stimulation is a method which is now very nearly exhausted. It has been of the greatest use in the localizing of the motor area and is still of much value in the course of operative explorations. Further, the work of Harvey Cushing[4] in stimulating the sensory area of man has opened up a new if limited field for research. But the side from which has appeared most that is valuable of recent years is the histological one, comprising study of the various regions of the brain. The various projection areas of motion and sensation are very nearly completely settled, but we still have a great deal to learn of the exact functions of each of the association fields. To take a simple and notoriously controversial example, there is the question of aphasia, which is, above all, an upset of association and not therefore to be explained by lesions of Broca's convolution or of any other purely projection area. Much can be confidently expected from the combined work of the psychologist and the histologist.

As to the methods employed by the cortical investigators of the present day, a few words may be helpful to the reader. These

* Read before the Victoria Medical Society, B.C., March 5th, 1915. Received for publication, March 15th, 1915.

may be classified into: (1) Microscopical methods: (a) of white matter; (b) of gray matter. (2) Macroscopical methods of Elliot Smith.

1. (a) Flechsig must be regarded as the founder of modern work, but his method of investigation of the white matter and division of the brain surface according to the date of appearance of the myelin sheaths of the nerves connected with the various areas, whilst it gave very important data, is now abandoned. We have to thank Flechsig for our knowledge of the existence of projection and association areas (see Sabin[5]) but there can be little doubt at this time that the areas of common sensibility as mapped out by him (crossing the sulcus centralis and including the motor cortex which was thus sensori-motor) extended too far forwards.

(b) The majority of observers since Flechsig have pursued pure histological studies of the gray matter of the cortex. Campbell's great work of 1905 has been followed by a host of workers of whom the most important are Shaw Bolton, Brodmann and Mauss. By this method a brain is cut up into small numbered blocks which are suitably fixed, cut and stained with either polychrome methylene blue or iron-hæmatoxylin. Naturally, in the examination of any one area a very large number of sections have to be inspected, and the eye-strain involved is very great. Apart from this, the method is a very difficult one, and a careful and long training is needed before slight structural differences can be appreciated. The maps obtained by this or the following means are represented in diagrams marked out into areas by means of empirical figures, which do not, however, indicate in any way the shape of the cells of which the particular areas are composed. In these examinations attention is paid not only to morphological differences in the cells, but also to the different thicknesses of the various layers of which the gray matter is composed. The best account of these layers is probably that of Shaw Bolton, who describes five strata. This worker has perfected the method of cell-layer measurements, called the "micrometric method" and has drawn some important conclusions from it. He has, however, restricted his examinations to three large areas of the brain. His results as a foundation for the classification of mental disease are very valuable, but his neglect of the posterior association fields is a defect.

2. The cortical charts of Elliot Smith[6] have been compiled by examination of the gray matter of the sliced fresh brain with the naked eye. It would be imagined that only the most gross differences could be detected in this manner. However, Elliot Smith

—at the time that his work was done—possessed some very special advantages. As professor of anatomy at Cairo he was able to obtain subjects in the dissection room within fewer hours after death than is usual in ordinary post-mortem work. As post-mortem cooling sets in the gray matter alters very considerably, and chemical reagents such as alcohol and formalin produce marked changes. Before coagulation has taken place the gray matter is very translucent (and in the Soudanese slightly pigmented) and the bands of white matter which striate it (the bands of Baillarger) stand out very clearly in it. It is thus an easier matter than would at first be expected to note the changing relationships and the changing distinctness of the white bands, which denote of course a corresponding histological change. There are two areas of the brain whose extent can always be very readily determined naked-eye—these are the motor area and the visual area. The former possesses a very thick cortex which passes abruptly into that in front and behind of it; the gray matter of the latter contains an additional very distinct band of white, the stria of Gennari, in which the optic radiation ends. This area, which Elliot Smith has called the striate area and Bolton the visuo-sensory, is the true area of sight. As has just been said, it can be very readily mapped out macroscopically by the most inexpert and this even on the formalin hardened brain, owing to the sharp edge which this "striate" area has. The major portion of the cortex is not so easily delimited into areas and much controversy exists as to the exact extent of certain areas. The macroscopical method has this advantage over the microscopic, that an experienced worker can rapidly examine a number of fresh brains, and so build up a chart of different areas based on a large series of brains. On the other hand it is a very difficult matter to make a chart of all the areas from one brain alone, owing to the considerable slicing up which is necessary. The microscopic method has not this disadvantage, but the great labour and eye-strain involved precludes the possibility of examining the whole of more than one brain in a very long time. Charts obtained by the latter method are therefore more open to criticism.

The Motor Area

The discovery of Fritsch and Hitzig alluded to at the outset led to a great amount of animal experimentation, the most important of which was the now world-famous investigation of the motor area of the chimpanzee by Sherrington and Grunbaum.[7] This is important not only because the use of unipolar stimulation reduced

error to a minimum, but because the chimpanzee's brain is so like man's that the results of their experiments could be applied to the human brain with the happiest results. The motor cortex of man has now been stimulated a vast number of times during operations with results confirmatory of those obtained in the anthropoid ape. In this connexion it must be remembered that the whole of man's motor area has never been stimulated electrically in any one case, owing to the mutilating exposure which would be necessary to enable this to be done. This is especially true of the portion of it which lies on the mesial surface of the brain, for the presence of the superior longitudinal venous sinus in this region makes approach extremely difficult. Further, the portion of the motor cortex which lies within the lips of the central sulcus has not been stimulated in any animal as far as the present writer is aware. This is certainly true of man as the furrow can not be opened up till the arachnoid has been stripped, a damaging proceeding in the living subject. This must be remembered before it is dogmatically asserted that certain movements cannot be elicited by cortical stimulation, for histology clearly shows that much of the motor area is hidden from sight in the anterior wall of the Rolandic sulcus.

Our knowledge of the human motor area has been derived from many sources: from clinico-pathological findings, particularly those of Hughlings Jackson, who described the irritative lesions of the motor cortex producing the type of epilepsy which bears his name; from the observations of Sir Victor Horsley, Cushing and many others who have stimulated the motor area in the course of operations; and by inference from the chimpanzee, as just stated. Finally, from the purely anatomical side it has been shown that the extent of the motor cortex of man or any other animal can be definitely decided by histological study as has been described.

The most peculiar findings of Sherrington and Grünbaum were in connexion with the stimulation of sensory areas. It has been generally held that these areas are inexcitable to electrical stimuli, and that the movements sometimes produced by excitation of such regions were due to the presence of motor cells contained amongst the sensory ones. Thus the phenomenon of conjugate deviation of head and eyes was obtained by stimulation over the occipital pole of the brain in the region of the calcarine fissure. This region Bolton[8] and Elliot Smith[6] have shown to be the site of the visual (visuo-sensory) area and to be purely sensory. Conjugate deviation was also elicited from stimulation of the auditory area, i.e. from Heschl's gyrus, which lies on the temporal lip of the Sylvian fissure

(B.N.A. fissura lateralis cerebri) and partly hidden within it. Ferrier stimulated the hippocampal (olfactory) region of the rabbit and produced wrinklings of the nose and face, suggestive of the reception of an olfactory sensation. Histological surveys have since shown that these sensory areas are of like structure in their whole extent and are devoid of the large pyramidal cells of Betz, with which alone we have learned to associate motor function. Another explanation of these movements must therefore be found. Interesting light is thrown on these peculiar occurrences by the reports of Harvey Cushing[4] who stimulated the post central area (of common sensibility) of the human brain in two conscious patients. These persons experienced sensations of touch upon the electrical excitation of their post central gyri. Van Valkenburg[12] has recently published two similar cases, and has given a detailed account of his findings. Stimulation of the post-central gyrus caused sensations of stiffness, "deep pulling", pattering touch, and sometimes of cold. Exploratory incision of the cortex produced a sensation of warmth. The sensory points were sharply limited, and seemed to correspond in position with the motor points on the precentral gyrus. This is a very important fact, as it is thus definitely proved that the sensory cortex as well as the motor is excitable by means of electrical stimuli, and it will be realized that this is the probable explanation of the movements that have been elicited from excitation of the sensory areas of animals. These cases are thus examples of cerebral reflex motions, the animals receiving apparent sensations and making suitable motor responses. Stimulation of the motor area in the conscious patients referred to produced the usual movements, and although the subjects were fully conscious of the muscular contractions there were no sensory perceptions such as characterized the stimulation of the post-Rolandic region. This is strong evidence against the so-called sensori-motor properties of the pre-central area.

As to the posterior limits of the motor area there can be no doubt at this time but that it has a sharply defined edge coincident with the bottom of the sulcus centralis (fissure of Rolando). The anterior wall of that sulcus is composed of motor cortex, the posterior of sensory cortex, an abrupt transition taking place histologically at the meeting place of the two in the depths of the furrow. This is confirmed by experimental evidence as in the primates at any rate (i.e. in man and the various monkeys) the electrode passes from excitable to inexcitable cortex at the sulcus centralis. It is notable also that the change in the cortex is visible even to the naked

eye, as Elliot Smith has pointed out. It will be readily realized from the foregoing that histology is becoming the final arbiter of the exact nature of any disputed furrow. There is considerable evidence to show that many wrong homologies have been drawn in the past, which will now have to be corrected in the light of our present knowledge. The so-called sulcus centralis of dog's brain is a good example of such misnaming. In order that a sulcus should be properly sulcus centralis it must fulfill a very definite condition—it must limit the motor area posteriorly from the sensory area, and if it does not do this experimentally and histologically, then it has come by its name falsely. The experiments of Fritsch and Hitzig showed the dog's motor area as being U-shaped, extending in front and behind the sulcus centralis. Now, if this be true, it is evidence enough that the canine sulcus centralis is not truly centralis and should be called by some other name, such as paracentralis. Brodmann[10] has recently published a map confirmatory of this contention, showing the sulcus commonly called centralis of the bear as really lying amongst the cells of the area precentralis, and having no relationship with the post central area at all. The sulcus centralis is in many respects (especially clinically in man) the most important furrow on the brain. Yet it is by no means the most ancient and is not present in all animals as we have just seen, and there are many other examples (see reference 3 for further information on this point).

The Formation of the Cerebral Furrows

The very definite demarcation of the motor and sensory areas, the line of junction between the two being situated as it is at the bottom of the sulcus centralis, is an important piece of evidence in support of the newer theories as to the formation of the cerebral furrows. It is now believed that these are not produced by the undirected folding of an organ attempting to adapt itself to limited space that is all that Nature can allow it. There is much histological evidence to show that the furrows tend to form at the edges of areas of the cortex which possess different cyto-architectural structures.[8] The importance of this will be at once evident, as it explains the positions of the furrows, gives them a purpose, and makes them very useful landmarks to the clinician as boundaries of the different areas. In this connexion the writer may well repeat what he has written elsewhere,[3] that a furrow is not an entity in itself; it is a symptom of the specialization of the cortex. Thus let us suppose that the primitive smooth fœtal cortex becomes specialized

into any two contiguous areas, possessing a different structure. When the brain increases in size and furrows have to form to accommodate the redundant cortex, these will tend to appear between areas which are texturally different. The "limiting" nature of most sulci was first pointed out by Elliot Smith. Take for example the sulcus centralis: This is the limiting furrow between the motor and sensory cortex, and does not appear until those areas are developing, when it can be seen to lie as a shallow groove between the two. This is the state of affairs in the fœtus of eighteen weeks (Bolton and Moyes[9]). As development proceeds and new areas are differentiated there is not so much room as there was for the spreading out in full of the various areas, so that a certain amount of compression occurs, causing the old furrows to deepen and new ones to arise in connexion with the newer areas. Instead of being exposed in a smooth sheet, a large proportion of the various areas have to take refuge by mutual interpressure within the depths of the sulci, and that is how these sulci are formed. The position, the length, and the direction of each furrow is determined by architectural changes in the gray matter as just described, whilst the depth of the furrow will depend on the amount of cortex which has to be accommodated in its walls. Thus the furrows will be more numerous and will be deeper in an animal whose brain is highly specialized into different functional areas, and so has a cortex of great extent. This is true of the primates at least, but there is evidence to show that the method of furrow production just described[3] does not hold for the whole mammalian kingdom. With regard to the human brain itself, Brodmann[10] has recently shown that no less than 64 per cent. of the total surface of the human cerebral hemisphere lies hidden in the walls of the furrows. He obtained this figure by careful measurements with tissue-paper ruled in sq. m.m. This shows at once how important the furrows are, since so much cortex lies within them. It is also an earnest of how richly man's brain is endowed with specialized areas. The brains of the anthropoid apes do not possess so many areas and consequently furrow formation is not carried in them to such a pitch. In the lowest monkeys whose brains possess the absolute minimum of special areas, the furrows are so few in number and so shallow that only perhaps 7 per cent. of the cortex is hidden in them and 93 per cent. is displayed in full. The human fœtal brain resembles the lower monkeys in this respect, but as we have indicated new areas are so rapidly acquired that furrows appear early and are very soon numerous and deep. The hemispheres of the lower

animals are made up almost entirely of projection areas (i.e. areas connected up with the projection fibres carrying motor impulses and the various sensations) and these are the areas which appear earliest on the human brain. But in man an enormous growth occurs, as the writer has shown elsewhere, of association areas—areas comparatively poor in long distance projection fibres but rich in short ones linking up the various portions of the cortex. These form the parietal[1,2] part of the temporal and most of the frontal regions, and are the regions where the various impulses received by the projection fibres are correlated and weighed, and decision is made as to what motor response shall be made to the sensations received. Bolton has produced good evidence[11] to show that the frontal area (and by this we mean "area" or "regio frontalis" proper of Brodmann, sometimes called "prefrontal" of Campbell, as opposed to the "precentral" or motor area*) is the highest and controlling association area. He has called it the area of "voluntary association," and shown that it is the last area to be developed on the human brain, the one which shows structurally the greatest individual variation and the one which shows the earliest and most marked changes in mental degeneration. Brodmann also has shown that this area is of much greater extent in man than in any other animal, the nearest rival being the chimpanzee. His figures are as follows:

	Regio prefrontalis:		Regio precentralis:	
Man.....	29	per cent. of the whole brain	7·3	per cent. of the whole brain.
Chimpanzee....	16·9	" "	13·6	" "
Gibbon.....	11·3	" "	10·1	" "
Macaque.....	11·3	" "	11·9	" "
Dog.....	6·9	" "	13·4	" "
Cat.....	3·4	" "	9·2	" "

The proportionate extent of the regio prefrontalis is probably the best indicator that we possess of the position of an animal in the evolutionary scale. It is certainly more accurate than computation of the number of convolutions present and their measurements, a method which is very untrustworthy. The final word with respect to the intelligence of a brain seems to be the histological survey of the frontal lobes—a laborious process.

---

* The old artificial division of the brain into stereotyped lobes artificially bounded by sulci has now been given up, and we more properly refer to the various portions of the cortex as areas and regions which are bounded by the sulci which these areas have themselves produced. (Elliot Smith, "Central Nervous System." Cunningham's "Text-book of Anatomy," 4th Edition, 1913.)

References:

1. Jefferson, Geoffrey, "Morphology of the interparietal sulcus," *Brit. Journ. of Anat. and Phys.*, vol. xlvii, 1913.
2. Jefferson, Geoffrey, "A note on the sulcus postcentralis superior," *Anatom. Anzeiger, Band.* 44, 1913.
3. Jefferson, Geoffrey, "Cortical localisation and furrow formation," *Journ. of Comparative Neurology.* Vol. 25, No. 3, 1915.
4. Cushing, Harvey, "A note upon the Faradic stimulation of the postcentral gyrus in conscious patients," *Brain*, 1909.
5. Sabin, Florence, "On Flechsig's investigation on the brain," *John's Hopkins Hosp. Bulletins*, February, 1905.
6. Elliot Smith, Grafton, "A new topographical survey of the human cerebral cortex," *Journ. of Anat. and Physiol.*, 1907.
7. Sherrington and Grünbaum, Thompson and Yates Laboratory Reports, see also *Encyclopædia Britannica.*
8. Elliot, Smith, "The central nervous system," Cunningham's "Text-Book of Anatomy," 4th edition, London, 1913.
9. Bolton, J. S. and Moyes, J. M., "Cyto-architecture of cerebral cortex of human fœtus of eighteen weeks," *Brain*, 1912.
10. Brodmann, K., "Neue Ergebnisse über die vergleichende histolog. Lokalisation, etc," *Verhand. d. Anatom. Gesell.*, 1912.
11. Bolton, J. S., "The brain in health and disease," London, 1914.
12. Van Valkenburg, M. C. T., *Nederland. Tydschrift voor Geneeskunde*, June, 1914.

The Australian Government has decided to establish a Federal Serum Institute, which, probably, will be situated at Canberra.

Rabbits in the province of Alberta are reported to be dying in large numbers. The cause appears to be an infection by the *cysticercus pisiformia* which has been found in specimens examined.

It is estimated that $7,500,000 will be required for the relief of soldiers' families during the year commencing October 1st, 1915. During the first year of the war, the sum of $5,350,000 was contributed by the Dominion to the Patriotic Fund, a per capita average of seventy cents.

Case Reports

STAB WOUND OF LIVER

By Frederick J. Tees, B.A., M.D.

Out-Patient Surgeon Montreal General Hospital

LATE one night during the term of my superintendentship of the Montreal General Hospital a young Italian, aged twenty, was hurriedly brought to the hospital in ambulance. He had been spending the evening with a few compatriots when a certain liveliness occurred as a result of which he received two stab-wounds, one in the left upper abdomen and the other in the right side of the thorax.

On admission to the hospital the patient was extremely pale, very restless, and perspiring freely; he had a pulse of 150, and his clothes were saturated with blood.

By reason of the severity of the hæmorrhage he was taken immediately to the operating room where we found a wound four inches long in the left hypochondrium through which a mass of omentum the size of one's hand was protruding,—but of a much more serious nature was the wound on the right side of the chest, in the sixth intercostal space, parallel with the ribs, dividing the intercostal muscles and exposing the cavity of the pleura for over six inches.

With each expiration blood was welling out through the wound in alarming quantities.

When the ribs were retracted there was disclosed in the subjacent diaphragm a wound corresponding in length to the incision on the surface, and through the cut edges of the diaphragm blood could be seen literally pouring up.

These edges of the diaphragm were brought up to the surface and on being held apart revealed an extensive gaping wound in the liver even longer than the superficial wound. This, the source of the profuse bleeding, was partially controlled by the introduction between the liver and the diaphragm of several large abdominal

---

Read before the Montreal Medico-Chirurgical Society, January 8th, 1915.

pads. The cut edges of the diaphragm were then sutured to the cut edges of the intercostal muscles, thus shutting off the pleural cavity but giving complete access to the injured liver.

More packing was then introduced into the opening thus formed, the pressure being gradually increased, and when some twelve pads in all had been so placed the hæmorrhage ceased.

Treatment of the other wound was a simple matter, the protruding omentum having been tied off and the wound closed without drainage.

In spite of the loss of blood which was extreme and the desperate condition of the patient he made an uninterrupted recovery. On the third day some of the packing was removed, the remainder following on the fifth day, leaving a large gaping wound in the depths of which the wounded liver could be plainly seen. The right pleura was aspirated on the ninth day and a quantity of bloody fluid evacuated. This was repeated on the twenty-third day yielding a small amount of blood. The wound gradually filled up and on the fortieth day after operation the patient walked out of hospital with a small healing ulcer at the site of the incision.

The points of interest in the case are the unusual nature of the injury and the method employed of obtaining and maintaining access to the liver through the walled-off pleura which proved so eminently satisfactory.

THE death rate from typhoid fever in Toronto during the first ten months of 1915 was 1·9 per 100,000; for diphtheria it was 10·3 per 100,000, and for scarlet fever 2·6 per 100,000. This compares very favourably with the figures for the same period in 1910, which were, typhoid, 43·5 per 100,000; diphtheria, 41·8 per 100,000; scarlet fever, 24·7 per 100,000. The general death rate in Toronto during the first ten months of 1915 was 10·8 per 1,000, and for the same period in 1910, 14 per 1,000 of population.

Editorial

THE "CARRIER" PROBLEM

THOUGH the "carrier" of infectious disease, like the poor, is always with us, it is in war time that he becomes especially an object of attention and suspicion.

As long as "Typhoid Mary" carried her bacilli only into the homes of the few who unwittingly employed her, she was to the rest of us only something of a mild sensation and to those with an acute sense of humour, a bit of a joke; but when other "Marys", male or female, menace the health of an army, and with its health its usefulness and our safety, the whole question increases in magnitude by arithmetical progression.

As Mons and Ypres before 1914 were merely names, and are now history, and will never be only names again, so also the subject of disease carriers, which had before the war a mild academic interest, will now in view of the vast numbers affected gain an importance which cannot be overestimated, and one may readily prophesy that methods for the search for, and the treatment of, these carriers will form a larger part of preventive medicine than we can at present imagine.

Thanks to the almost universal use of antityphoid inoculation in the army, the typhoid carrier has not proved such a menace in military as in civil life; but paratyphoid, both "A" and "B" have shown a large case incidence, and a mortality to which in this country we are quite unaccustomed. Many cases of paratyphoid have appeared among troops acting in association with East Indians, and the carrier problem has thus come very much to the fore.

The large number of East Indians on European soil, as well as the return of invalids from Gallipoli and Egypt, has laid England open to invasion not only by paratyphoid, but dysentery and cholera as well, and what applies to England, holds good in a lesser degree for Canada. The phase of the "carrier" problem which so far has affected Canada most, is that which concerns cerebrospinal fever, and this, one of the latest developments of the question, indicates the almost uncanny way in which an apparently healthy man may sow a disease among his comrades.

That to find the source of an epidemic we should look to *persons* and not to *things* is not a new idea, but its illustration on such a large scale in the case of cerebrospinal meningitis gives it strong emphasis in dealing with diphtheria, scarlet fever, tuberculosis and other infections.

The solution of the carrier problem has at the first glance difficulties which appear almost insurmountable, when it is understood that any individual is a potential carrier of some disease. Actually, however, the problem is greatly narrowed by the fact that in typhoid, paratyphoid, and dysentery carriers there is usually a history of a previous illness. In this connexion may be quoted an instance of an outbreak of fatal dysentery in an English institution following the admission of a child with colitis. This child had never been out of England but her father was a soldier home from India, where he had dysentery some months before. In cerebrospinal fever the more or less immediate contacts of a case are the only likely carriers, and it has been also shown that though a carrier need not suffer from meningitis he almost invariably shows the nasopharyngeal catarrh characteristic of the developed disease.

These facts are of assistance in limiting the field of investigation. In the case of diphtheria the "carrier" who has no recent history of sore throat or nose, or who does not show an abrasion of a mucous membrane, must be rare indeed.

The elimination of the carrier involves first his recognition, and this requires an open mind and an attitude of suspicion toward any mild or unnamed illness as a possible source of infection. If a fraction of the time and energy spent in perfunctory disinfection of places and things were given to a search for infected persons, many epidemics would quickly be ended.

When a person becomes a suspect his acquittal or conviction is in the hands of the bacteriologist. When the carrier is found what shall be done with him? We may kill rats or swat mosquitoes, but something else must be done with humans. Isolation in some form is imperative. In the case of cerebrospinal fever, the bacteriological examination of the nasopharynx of all contacts and their treatment until negative cultures are found has been the practice. For the intestinal infections institutions have been opened in England where convalescents are received and have the stools periodically examined until infectivity disappears; in the meantime their military training goes on.

The time-consuming character of the examinations, and the necessity for trained bacteriologists to carry them out, are the greatest difficulties in handling large numbers of carriers.

The ubiquity of the carrier is the chief argument in favour of universal preventive inoculation, and Professor Castellani's results in Serbia with a tetravaccine or quadruple vaccine carrying in one dose inoculations against typhoid, paratyphoid "A" and "B", and cholera, would warrant a general use of such a measure if the future confirms his findings.

DR. EDWARD LIVINGSTONE TRUDEAU: A TRIBUTE

"Behold, I set before you this day a blessing and a curse."—Deut. 11-26.
"But the land, whither ye go to possess it, is a land of hills and valleys, and drinketh water of the rain of heaven."—Deut. 11-11.
"And ye shall teach them your children, speaking of them when thou sittest in thine house, and when thout walkest by the way, when thou liest down, and when thou risest up."—Deut. 11-19.

IN the death of Dr. Edward L. Trudeau who passed away in his sixty-seventh year, at his residence at Saranac Lake, N.Y., on November 15th, 1915, the medical profession lost one of its finest members, and the world at large a noble and benevolent gentleman.

The story of Dr. Trudeau's life reads like a romance; and although it has been made familiar to us through many tributes to his memory in the public and professional press, yet a sketch of his brilliant career will, we feel confident, not only prove of great interest, but also, owing to his very courageousness, and the manifold humanitarian results he attained, prove a stimulus to others in their great endeavours towards the betterment of mankind.

Dr. Trudeau was born at New York, October 5th, 1848, the son of Dr. James and Cephise (née Berger) Trudeau, and there received his education, graduating from the College of Physicians and Surgeons of New York City in 1871. A year later he began the practice of medicine in New York City.

Unfortunately at this time his brother was ill with consumption, and with that unselfish and brotherly love, which characterized his whole life, Dr. Trudeau attended and nursed him under conditions such as then existed in "a room purposely kept overheated and unventilated, and with no precautions taken against infection." It is not to be wondered at that Dr. Trudeau proved to be the next victim of lung disease in the family, and having just seen his brother die in the confined city, made a determined effort to treat himself in a different manner. To this end and against all advice he decided

to go to the Adirondack Mountains, and shortly was established at Saranac Lake, N.Y.

The following four years of his life were those of heroic optimism, and determination to defeat his foe by means of nature's elements, and by the strict application of the theory of *rest* to an inflamed membrane. The beneficial results of this treatment which he obtained so strengthened his belief in the efficacy of rest, nutrition, and fresh air as a curative procedure in the treatment of pulmonary tuberculosis, that, in 1884, he founded the Adirondack Cottage Sanatorium for the Treatment of Incipient Tuberculosis for Working Men and Women, the first institution of its kind to be established in America.

Here, be it noted, is seen, in the name of the sanatorium —for working men and women—the noble character of this physician. Neither to the rich did he cater, nor did he prostitute his profession to a commercial basis: his helping hand was first and always extended to those who could ill afford the expense entailed by the costly and idle life of the so-called "rest cure."

The simple theories then put into practice by Dr. Trudeau are to-day acknowledged the world over; and the large number of patients cured either under his personal direction, or under that of his many disciples, is the best testimonial as to the worth of his treatment.

While the Adirondack Cottage Sanatorium accomplished a great work in treating patients, it did not complete the masterful scheme which Dr. Trudeau had projected to combat tuberculosis, and ever realizing that bacteriology and pathology must go hand in hand with clinical medicine, he founded ten years later the Saranac Laboratory for the Study of Tuberculosis, the first research laboratory devoted to tuberculosis to be established in the United States. In this laboratory Dr. Trudeau surrounded himself with devoted students, and co-workers, who to-day, while mourning their

master are carrying forth the spirit of honest work inspired by him into all parts of the world.

One might be inclined to think of Dr. Trudeau's devotion to this laboratory as indicating a tendency towards materialism, but the following extract from a personal letter to one of his students, recently published in the *Journal of Outdoor Life*, Volume xii, No. 12, must at once dispel such thoughts: "I sometimes almost rebel at the sneers of the scientists at our emotions. They are just as much a part of us as our intellects and though they may be misled, they are capable of leading us much higher and farther than our reason. Our friendships are the best things in our lives and they are surely not influenced by our reason. The great gospels themselves do not appeal to our intellects, and yet they are the sources of all that is best in us." To another he wrote: "The more I live, the more I feel that what we need is faith, faith in the simple teaching of Christ as a moving force in our lives, not as merely something to theorize about. I do not believe that anyone ever gets faith—the real kind of faith—by learned books or discussions, but simply through living it."

Dr. Trudeau's sixtieth birthday was probably one of the happiest days of his life, for on it hundreds of letters and telegrams poured in from all parts of the country bearing messages of gratitude and love from former patients, students, and admirers, while his co-workers in the laboratory dedicated a compilation of all their contributions to him, in honour of his anniversary.

Naturally the great value of Dr. Trudeau's teachings and writings brought him richly deserved honours. In 1899 he was given the honourary degree of M.Sc., by Columbia University, the degree of LL.D., by McGill University in 1904, and the same degree by the University of Pennsylvania in 1913. In addition to his Fellowship in the American Medical Association, and New York Academy of Medicine, Dr. Trudeau was a member of the Association of American Physicians, the American Climatological Association, and was

the first President of the National Association for the Study and Prevention of Tuberculosis.

Those of us who were so fortunate as to have come under his noble and benign influence feel that by his death we have lost one who "helped to make the medical profession a benediction to mankind."

SOLDIERS' WIVES AND FREE MEDICAL TREATMENT

WHEN, in 1914, Emperor William declared war against France, Russia, and England and ruthlessly invaded Belgium, he did so because he saw that Ireland was the seat of two factions ready to fly at each other's throats, India was a hot-bed of rebellion, and Canada was decidedly lukewarm in her allegiance to the Mother Country. Instead of that being the case, however, every part of the Empire rallied to Britain's assistance and every section of the community showed that it was ready to do its part in the struggle for freedom from the iron hand of militarism. In addition to the thousands of fighting men which the colonies have contributed to this just cause, Canada has sent across the seas hundreds of medical men who have done work of which we all are deservedly proud. All members of the profession were not in a position to leave their practices and yet wanted to do their "little bit". As a result the members of the various medical societies throughout the country decided that they would treat all soldiers' wives gratuitously. The result has been that a great amount of work has been done freely and willingly for those left behind by our heroes at the front. These physicians are still willing to continue the good work, but the time has come when it is desirable to look the situation calmly in the face and see if there is not a great danger of pauperising these people. One reads of how the wife of one soldier has been enabled to purchase a piano

since her bread-winner left her; of another instance where a motor drive was indulged in at a cost of several dollars which had been received from one of our charitable societies, these being vouched for cases. Surely these two women could pay for medical attention. Of course, in conditions such as exist at present, it will be argued that there are certain to be a few cases of fraud and that the whole should not be judged by the actions of a few. Undoubtedly, there are many of these women who are in decidedly straightened circumstances as a result of their husbands going to fight for the liberty of the nation, but, no matter what happens, these will be well looked after, and it is a well-known fact that many are better off financially than they were before the war.

We have before us two cuttings taken from papers published in widely separated parts of the Dominion, and in each it is stated that the medical men of the district have discontinued free attendance upon the wives of soldiers, but that these will be charged moderate fees where they are in a position to pay them. This appears to be a just decision and, from what we know of our confrères' charity and humanitarianism, we may be sure that no one will be allowed to suffer. This frightful war shows no signs yet of terminating and we may be called upon to sacrifise more of our gallant men. While it lasts, let us use common sense, and be fair and just, not only to the dependants of our soldiers but to ourselves and *our* dependants.

Some account was given in the November issue of the Journal of the arrangements made for the reception and care of members of the Canadian Expeditionary Force who have been wounded or otherwise disabled and have returned to this country. The provision of the necessary medical treatment and accommodation has been undertaken by the Military Hospital Commission, with headquarters at Ottawa. As this Commission meets once a month only, a sub-committee

has been formed in each province, consisting of the representatives of that province on the Federal Commission, and has been charged with the conduct of arrangements for convalescent home accommodation and medical treatment for invalided members of the Expeditionary Force. The provision of employment for these men, when discharged, which, originally, was in the hands of the Patriotic Fund, was also undertaken by the Hospital Commission. Since such matters are usually dealt with by the provincial and municipal governments, the provincial governments were requested to assist the Federal Government in providing employment and, accordingly, provincial committees have been appointed to make the necessary arrangements. In many cases the men are unable, through disability or from some other cause, to return to their former employment and thus the necessity arises of training such men so that, in the future, they may be able to support themselves, partially at least. A representative of the Commission has been appointed to each of the provincial Committees and reports will be made to Ottawa. The facilities of the provinces so far as technical schools, asylums for the blind, etc., are concerned, have been placed at the disposition of the provincial committees and suitable cases will be sent to these institutions for training. The western provinces have decided to provide institutions for joint use as follows, and these doubtless, when complete, will be offered to the committees,—in Manitoba, an institution for incorrigibles and deaf mutes; in Saskatchewan, an asylum for the blind; in Alberta, an institution for mental defectives; and in British Columbia, an institution for imbeciles. The capital cost of each of these units will be borne by the province in which it is established but the maintenance of the institutions will be shared by the four provinces. A plan has been formulated by the Government of Ontario for the training of soldiers who are blind, deaf, or dumb, and a report on the matter was recently presented by Dr. A. H. U. Colquohoun, deputy minister of education. It is probable that special

classes in lip reading will be given next summer at the Belleville institution.

Convalescent homes have been established at Sydney, Quebec, Montreal, Toronto, Hamilton, London, Calgary, Victoria, and St. John, and other places, and any invalided soldier who returns to Canada and who has not been discharged from service can be placed in one of these convalescent homes on making application to the secretary of the Hospital Commission at Ottawa. Arrangements have been made with the Red Cross, Daughters of the Empire, and other societies, for the provision of comforts in the shape of clothing, reading matter, etc., and electrical treatment, massage, and other remedial measures are adopted in all the convalescent homes for the improvement of atrophied limbs and stiffened joints. The men are kept in these homes so long as there is reasonable hope of improvement, but when this no longer exists they are discharged on a pension. Soldiers suffering from tuberculosis are sent to a sanatorium and the sum of ten dollars a week is paid by the Government for their treatment. It has been estimated that only about ·02 per cent. of the total number of men enrolled have developed tuberculosis, and about 10 per cent. of the men who are invalided back to Canada require further hospital treatment on arrival. An examination of the medically unfit is made at Liverpool before the men embark and, on reaching this country, they are again examined at the clearing hospital established at the port of arrival. If discharged, they are given a pension and three months' pay, payable in three monthly instalments. A careful record of these cases is kept, including the nature of disability, the occupation prior to enlistment, the possible sources of income, and the nature of occupation they would like to follow if unable to continue the work in which they were engaged before enlistment.

It was decided at a meeting of the Hospital Commission which took place on December 15th, that any soldiers who had been prematurely discharged from hospital and who

still required treatment should be readmitted and again put on the pay roll, and that a technical officer should be appointed at headquarters to direct the technical and vocational training of the returned men.

THE demand for medical men for overseas service would appear to be increasing, and though the practitioners of Canada and the medical schools have already sent hundreds to aid in the great work, they must be prepared to make even greater efforts to meet the situation. That the medical students of our universities have not been behindhand is amply shown by the number who have gone with the various hospital units. Recently, in at least two Canadian universities, the fourth year students have requested that they be given instruction throughout the summer months so that they may be graduated in the fall of 1916; they on their part engaging to enlist for service at the front on graduation. The request comes, no doubt, from a desire on the part of the students to do their bit for the Empire, but the faculties of medicine of the universities concerned do not feel that it would be in the best interest of the students themselves to crowd the work of the final year—the most important of the course—into a short six months. The question as to whether the licensing boards would recognize this as an *annus medicus* has, of course, not been taken up, but it is doubtful if such recognition would be accorded.

THE following account of the work of the National Committee for Relief in Belgium is taken from the *Lancet*, issue of December 11th, 1915, pp. 1322-1323. "During the six months of its existence (the Committee) has been instrumental in raising £1,185,000 throughout the British Empire, of which £1,100,000 have already been spent in food. This has all been bought and distributed by the Hoover Neutral

Commission which has received guarantees from the German military authorities not to requisition any food supplies shipped into Belgium for the use of the civil population. It is necessary for the British contributions to be not in kind but in coin, and the money is coming in from all parts of the British Empire—for example, New South Wales is contributing £30,000 a month. The American relief work runs parallel to the National, and America is at present undertaking to find a million pounds' worth of cloth to make warm clothes for the winter. The National Committee does not count on dramatic methods for raising funds, but on steady monthly contributions from county and rural committees, and especially on the working man's pennies which have actually amounted to a respectable proportion of the total. The need increases as time goes on; instead of one and a half million names on the books, as in last May, there are now two and three quarter millions. The increase is due, in part at least, to a reason which will appeal to the whole British Empire, that the Belgian prefers to starve rather than to work in German munition factories."

THE Academy of Medicine, Toronto, at its December meeting, unanimously passed a resolution commending the decision of the Ontario Government to supply free of charge to the people of the province sera for the treatment of diphtheria, typhoid fever, and allied diseases, a course of action particularly welcome in view of the increased cost of drugs and the consequent difficulty of obtaining antitoxin. Ontario is the first of the Canadian provinces to take up the question of the supply of serum. The first step in this direction was taken in May, 1914. At that time diphtheria antitoxin was not manufactured in Canada and the cost of serums annually imported into the country was something like $120,000. An arrangement was made with the University of Toronto by which antitoxin was to be prepared in the laboratories

of the University and supplied to druggists and to health departments at a much reduced rate. Later it was arranged that typhoid antitoxin should be supplied free to the people of the province and for the inoculation of the Dominion troops during the present war. In 1914, the price of diphtheria antitoxin was greatly reduced, and anti-tetanus serum has been supplied at cost. The new arrangement comes into force the first of next month.

A SPECIAL report on deaths from cancer in the United States during the year 1914 is in course of publication and will be issued shortly. As a result of enquiries received by the Director of the Census, the American Society for the Control of Cancer has issued a statement explaining the significance and essential features of the Census Bureau. The Bureau has not undertaken special research work which would duplicate the studies of other investigators, but the compilation of statistics of greater accuracy and more detail. The monograph about to be issued will contain tables indicating the number of deaths from cancer, the exact site of the disease, the age, sex, colour, nativity, and marital condition of the patient, certain or uncertain diagnosis, etc. It should contribute useful information concerning the prevalence of the disease in the United States of America.

THE letters of Lady Drummond and Lieutenant-Colonel Henry Page Croft, which recently appeared in the *Times*, are evidence of a feeling that has arisen in England against the policy of reserving hospitals especially for Canadian wounded. It was hoped that the English people would have an opportunity of ministering to the Canadians during their convalescence and that the two nations would learn to know and understand each other better, thus drawing more closely the bonds of union between this country and the Motherland. On the other hand, if one may judge from letters that have

appeared in the press, the Canadian soldiers prefer to be with their compatriots during the period of convalescence.

THE great Arrowrock dam on the Boise River, in the state of Idaho, is completed. It is the highest in the world and took four and one half years to build, about twenty thousand men being employed in its construction. We learn from a correspondent that, during the whole time the dam was under construction not a single death from contagious disease occurred, and that less than a dozen men were killed through accident. A brief physical examination was made of all applicants for employment and, in doubtful cases, a more complete examination was made. A well-equipped hospital was maintained which was in charge of a competent physician, who was also the chief sanitary officer of the camp. A camp foreman was employed to carry out the doctor's instructions in matters pertaining to sanitary conditions or general prophylactic measures and to keep the camp buildings and grounds in a neat and sanitary state. Our correspondent continues: "All bunk houses, dormitories, and other buildings were swept and cleaned every day by the janitors and camp men. These buildings were scrubbed out about every two weeks and the bunk houses and dormitories, as well as the springs and matresses, were fumigated by spraying with a liquid disinfectant about once in two or three weeks. At frequent intervals all sleeping quarters were fumigated by burning sulphur." Strict rules were enforced concerning garbage, etc., at private residences outside the camp, entrances were screened, and traps prepared for flies. "Pure mountain water was supplied from a creek and carried in a flume to the camp, deposited in a tank and piped to practically all buildings. A sewerage system with septic tank was installed to serve all buildings, and discharged into the river below." The result was that there were no epidemics and, in fact, very little sickness of any kind, and the dam was constructed in less than the estimated time.

Correspondence

Department of Hygiene, University of Toronto,

December 21st, 1915.

Editor,

CANADIAN MEDICAL ASSOCIATION JOURNAL.

SIR: In an article entitled "Influenza meningitis with report of two cases," by Dr. Alan Brown, which appeared in the December number of the JOURNAL, certain conclusions were drawn which I believe are not warranted by the evidence adduced by Dr. Brown.

Under the head of remarks the following statement appears: "In Wollstein's experimental work on guinea pigs and monkeys all the strains were obtained from definite clinical cases of influenzal meningitis either pulmonary infection alone or a combination of lung and meningeal infection. Cohen believes that most of the cases of influenzal meningitis reported have been those of so-called organisms of septicæmic meningitis infection caused by bacilli closely allied to that of the influenza organism, the only difference being that the latter is not found in the circulating blood while the former is characterized by its constant presence. Further work by this observer in conjunction with Fitzgerald, attempted to show that the bacillus of septicæmic cerebro-spinal meningitis has in the past been confused with the Pfeiffer organism. Both infections being highly fatal and the distinguishing feature being the reaction of agglutination. All other observers, with the exception of Odaira, differ from Cohen and Fitzgerald. Wollstein's work seems most confirmatory, in conjunction with the large amount of clinical evidence at her disposal."

First, with regard to the statement that "all observers with the exception of Odaira differ from Cohen and Fitzgerald". This is quite erroneous. Practically every observer, other than Wollstein, on the contrary, including Pfeiffer himself (the bacteriologist responsible for the first adequate description of *B. influenzæ*), agrees with Cohen that *B. influenzæ* does not, except under special conditions, cause a septicæmia.

Furthermore, Odaira who reviewed and repeated all the work done up till 1911, did so in Pfeiffer's laboratory, and under his

personal direction. Odaira absolutely agrees with the findings of Cohen, and of Cohen and Fitzgerald. Wollstein has seen fit to ignore this contribution which is much the most comprehensive that has yet appeared on the subject.

Again, the sixth edition of Muir and Ritchie's "Manual of Bacteriology" published in 1913, makes special mention of the differentiation between Cohen's bacillus and *B. influenzæ* Pfeiffer. This is because James Ritchie had an opportunity of verifying Cohen's conclusions.

Dr. Brown's article which is really a clinical one, brings forward no evidence to substantiate Wollstein's views.

The writer brings forward these facts at this time in justice to Dr. Cohen. This worker is one of Professor Bordet's colleagues at the Pasteur Institute, Brussels, and is not able at the moment to defend his scientific work because of the military situation. I may mention in passing that Bordet himself, one of the foremost living bacteriologists, holds views similar to those of Cohen in regard to this question.

It is impossible for the writer to reopen this subject now; but it would be very unfair to Dr. Cohen not at least to draw the attention of readers of the JOURNAL to the above facts.

I am, sir,

Faithfully yours,

J. G. FITZGERALD,
Associate Professor of Hygiene;
Director, Antitoxin Laboratory.

Book Reviews

DISEASES OF THE ARTERIES INCLUDING ANGINA PECTORIS. By SIR CLIFFORD ALLBUTT, K.C.B., M.A., F.R.C.P., F.R.S., regius professor of physic in the University of Cambridge. In 2 volumes. Macmillan and Company, Limited, London. Price, 30s net.

In these volumes Sir Clifford Allbutt has collected, rearranged, and where necessary altered, the numerous papers which he has written on a subject on which for many years past he has spent much study and labour. Sir Clifford always writes in a clear and

lucid manner, and arrays his facts very convincingly. He quotes numerous illustrative cases from his own records, thus adding greatly to the force and value of his conclusions. The volumes therefore form pleasant reading matter.

In the first volume the subject of arteriosclerosis is considered at length. After the introductory chapters in which the story of our gradually accumulating knowledge in reference to it is reviewed in an interesting manner, and the physics of circulation are discussed, he details his reasons for the slowly acquired conviction that although excessive blood pressure is the antecedent phase of a large class of cases of arteriosclerosis, and apparently in them a chief cause of the sclerosis, yet there are cases in which arteriosclerosis does arise without any previous increase in general blood pressure. To the condition met with in the first class he has given the name of hyperpiesia, embracing under this term not the high arterial pressure only, but the whole morbid series of symptoms of which high arterial pressure is only one. For the second series of cases in which arteriosclerosis is salient, but in which excessive blood pressure is not a marked feature he first proposed the name involutionary but owing to the objections raised to the word he afterwards changed it to *decrescent* arteriosclerosis borrowing the word from some old writings of Haller's, by whom the word was used to signify senile arteriosclerosis. In a third class he places arteriosclerosis the result of toxins arising from one of the infections or metallic poisons.

He complains that many years elapsed before this difference in the conditions met with in arteriosclerosis received due consideration from the profession. Even at the present day to the confusion of much of our clinical and pathological teaching, the distinction between the groups is often overlooked, and the difference in blood pressure attributed to incidental fluctuations in cardiac energy. In the succeeding chapters the etiology and the various symptoms of the disease are described and illustrated by numerous case reports. Towards the end of the volume he gives an excellent review of the immense volume of work done in connexion with the anatomical changes met with in the arteries. Until recently the results have not been very satisfactory owing to the lack of a definite standard for comparison, and the imperfect methods employed to secure complete relaxation of the arterial wall. The method first employed by MacWilliams in the preparation of physiological specimens and more recently elaborated by MacCordick in his pathological researches carried on in Professor Adami's laboratory in McGill

University, will remove these difficulties and enable a definite estimate to be made of the deviations from the normal.

The second volume opens with an interesting chapter on cardiosclerosis and myocardial values and is one of the most interesting in the book. In it he discusses and attacks many recent writings on the condition of the heart in arteriosclerosis. In speaking of myocardial values he refers to the vague way in which the term heart-failure is often employed. "Does this phrase mean that a snap of the heart stopped the whole machine otherwise capable of working on, as a snap of a connecting rod may stop the engines of the *Majestic*, or does it mean that the heart was the *ultimum moriens*, and that so long as this central organ held to it death was kept at bay?" After speaking of the many causes of heart failure from a clinical side and from the pathological findings, he writes: "When I desire to link up these two classes of information and confront the physician with the pathologist, and seek to correlate the times, periods, and modes of death the one with the other, I find myself but little nearer to practical guidance than I was before." Further on he writes: "Thus gradually it dawned upon the pathologist that the problems of cardiac failure were not so simple as in the rise of morbid anatomy had been supposed, and upon the physician that his clinical methods were fallible, indeed, far more so than had been supposed during the rise of stethoscopy." Sir Clifford then asks by what system of compensations was it that the same heart could be at once fairly competent clinically and yet pathologically the seat of old and intimate decay? In no organ is this lack of concord between the signals of life and death so disconcerting as in the heart. As Dr. Hector MacKenzie has said, "the heart that failed had sometimes been passed as sound in a searching examination for life insurance only a short time before." Thoughtful observers then began to put the matter more cautiously, and to say that when a patient succumbs suddenly owing to heart failure certain degenerative changes are usually found in the myocardium and vessels, and these may be supposed to account for the sudden ending. The point of importance to the clinician is that even in the gravest cases of myocardial lesion, symptoms may be none. The problem of sudden death, that is of the absence of symptoms during the main run of a myocardial lesion even to an extreme period, is not materially altered, if we include certain other cases in which indeed some symptoms do precede death, but do not put in an appearance till the lesion is far advanced. The author then discusses the symptoms or signs from which more timely

warning may be obtainable. "Fluctuations in the intensity of a murmur depend on so many conditions that unless other evidences of asystole be present no reliance can be placed upon them. Hypertrophy of the ventricles is so alien to intrinsic degeneration that we pass it by. The heart beat, the impulse against the chest wall, is not a cardinal point any way. It is common knowledge that a well marked chest impulse may be coincident with a small and bad radial pulse and conversely. Dilatation we cannot dismiss so readily. MacKenzie says dilatation is merely evidence of exhaustion of one function namely tonicity; many cases of sudden heart failure show no signs of dilatation." No experienced physician can doubt that percussion taken with other information may be of great service in corroboration but its direct indications are to be accepted cautiously. The variations in the pulse are then discussed. Sphygmomanometrical observations have proved hitherto to be of no use in the detection of myocardial disease, and the claims of the electrocardiograph Dr. Allbutt regards as extravagant. In time we may get some definite or even decisive signals from it. This chapter alone is worth the price of the book. The greater part of this volume is occupied by a discussion of the etiology of angina. There are chapters on its diagnosis, prognosis, and treatment, all of which will well repay perusal.

A. D. B.

PRATICAL MEDICINE SERIES. Under general editorial charge of C. L. MIX, A.M., M.D. Vol. V, Pediatrics, edited by ISAAC A. ABT, M.D., professor of pediatrics, Northwestern University Medical School; Orthopedic Surgery, edited by JOHN RIDLON, A.M., M.D., professor of orthopedic surgery, Northwestern University Medical School, with the collaboration of CHARLES A. PARKER, M.D. Chicago Year Book Publishers, Chicago, 1915. Price, $1.35.

This volume presents an excellent review of the literature of the past year on pediatrics. The question of infant feeding occupies thirty pages—infectious diseases occupy about the same number of pages. The material is well chosen—and the excerpts well made. The volume can be strongly recommended.

Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

INTERNATIONAL CLINICS: A Quarterly of Illustrated Clinical Lectures and especially prepared Original Articles on TREATMENT, MEDICINE, SURGERY, NEUROLOGY, PAEDIATRICS, OBSTETRICS, GYNAECOLOGY, ORTHOPAEDICS, PATHOLOGY, DERMATOLOGY, OPHTHALMOLOGY, OTOLOGY, RHINOLOGY, LARYNGOLOGY, HYGIENE, AND OTHER TOPICS OF INTEREST TO STUDENTS AND PRACTITIONERS. Edited by HENRY W. CATTELL, A.M., M.D., Philadephia; and others. Vol. III, Twenty-fifth series, 1915. Philadelphia and London, J. B. Lippincott Company. Price 1s. net.

ORAL SURGERY: A TREATISE ON THE DISEASES, INJURIES AND MALFORMATIONS OF THE MOUTH AND ASSOCIATED PARTS. By TRUMAN W. BROPHY, M.D., D.D.S., LL.D., Sc.D., F.A.C.S., president and professor of oral surgery, Chicago College of Dental Surgery; with special chapters by MATTHEW H. CRYER, M.D., and others. With 909 illustrations, including 39 plates in colours. Philadelphia, P. Blackiston's Son & Company, 1012 Walnut Street.

MEDICINE. Catechism Series. Part III, Second edition revised and enlarged. Edinburgh, E. and S. Livingston. Price 1s. net.

SENESCENCE AND REJUVENESCENCE. By CHARLES MANNING CHILD, of the department of zoology the University of Chicago. The University of Chicago Press, Chicago, 1915. Prince, $4.00 net.

YOUR BABY. A GUIDE FOR YOUNG MOTHERS. By E. B. LOWRY, M.D., Chicago. Forbes & Company, 1915. Price, $1.00.

Obituary

CAPTAIN H. S. MONKMAN, A.M.C., of Vegreville, Alberta, was killed in action in France on Thursday, December 2nd. Captain Monkman left Edmonton with the Third Canadian Mounted Rifles as second in command to Major F. W. W. Fane. Born in Ontario in 1876, Herbert Stanley Monkman graduated as a medalist from the Ontario College of Pharmacy in 1897, and in 1906 received his M.D. from Toronto University. He practised at Vegreville, Alberta, and was well known throughout the northern part of the province. He was a member of the Alberta Pharmaceutical Association, and for several years was examiner in chemistry for the province of Alberta.

CAPTAIN J. LEROY MAVETY died in France of acute poisoning in the twenty-eighth year of his age. He was the son of Reverend J. E. Mavety, of Ottawa, and was born at Kingston. He graduated from McGill University in 1911, and afterwards did some postgraduate work in New York. For a time Dr. Mavety practised at Haileybury, Ontario. About a year ago he went to England where he joined the R.A.M.C., and became attached to No. 10 North Midlands Field Ambulance. Captain Mavety showed great great bravery on the battlefield and was selected for special mention.

DR. JOHN LAING BRAY died at London, Ontario, November 30th. Dr. Bray was born at Kingston in 1841 and received his early education at the District Grammar School at London. He afterwards entered Queen's University where the degree of M.D. was conferred upon him in 1863. After securing his provincial license to practise he went to Richmond, Virginia, and for six months served as surgeon in the Southern army in the American Civil War. In 1865 Dr. Bray went into practice at Chatham, where he remained until 1907 when he was appointed registrar of the Ontario College of Physicians and Surgeons. About eighteen months ago he was obliged to give up this post on account of ill health. Through the death of Dr. Bray, the medical profession of Canada has lost one of its most honoured members and one who ever evinced a keen interest in all matters pertaining to the study and practice of

medicine. Dr. Bray was a member of the Ontario Medical Council from 1880 to 1907, being returned at each election without opposition; in 1881 and 1882 he was vice-president of the Council and the following year was elected president. In 1891 he was chosen president of the Canadian Medical Association. In April, 1905, the degree of LL.D. was conferred upon Dr. Bray by his Alma Mater. His widow and three sons survive him.

Major Archibald V. Becher, C.A.M.C., of London, Ontario, died of double pneumonia at Quebec, December 25th. Major Becher was the medical officer of the 33rd Battalion, and left London a few weeks ago for Quebec. He was born in London and was the son of the late Henry Becher, a leading barrister. After serving in the South African War, Major Becher took up the study of medicine, graduating from Western University in 1900, and commenced to practise in his native city. Interested in civic affairs and in politics, he was recently elected to the presidency of the London Conservative Association. His brother, Lieutenant H. Campbell Becher, was killed in action at Givenchy. Major Becher leaves a widow and infant son.

Dr. P. James Pidgeon, of Percé, Gaspé, died November 26th, at the age of forty-seven years. He was the son of Dr. J. A. Pidgeon, of Gaspé.

Dr. G. Chevalier recently died at Montreal Dr. Chevalier formerly practised at Bedford, Quebec. He was born at St. Eustace in 1822.

Dr. John E. King, of Anamosa, Iowa, died November 12th. Dr. King was a Canadian by birth and was born at St. Thomas. He was fifty years of age.

Dr. H. L. Foster, of Reed City, Michigan, died suddenly November 13th. Dr. Foster was born in Waterford, Ontario, in 1857.

Dr. Eugene Gregoire Quesnel, of Ottawa, died at Alfred, Ontario, November 24th. Born at Alfred in 1868, he obtained his B.A. from Toronto University, and subsequently entered upon the study of medicine at Laval University, graduating in 1895. He practised at Rockland for two years and then became medical

superintendent of St. Joseph's Hospital at Sudbury. In 1900 he went to Hawkesbury where he continued to practise until 1910, going from there to Ottawa. Dr. Quesnel was interested in both municipal and political affairs. He contested the county of Prescott at the last two general elections but was defeated on both occasions, and while residing at Hawkesbury was elected to the mayorality for three successive terms. He leaves a widow, one daughter, and two sons.

Dr. R. G. C. Kelly, of Watford, Ontario, died suddenly December 11th. Dr. Kelly was about forty-five years of age and had been in practice for some time at Watford. His death, which was due to apoplexy, occurred about midnight as he was leaving to answer a professional call to the country. Dr. Kelly, who was Lieutenant-Colonel of the 27th Lambton Regiment, recently offered to raise a battalion for overseas service. His offer was accepted by the military authorities and, at the time of his death, he was engaged in the formation of the 145th Lambton County Overseas Battalion. Lieutenant-Colonel Kelly had also taken an active part in patriotic work. He leaves a widow and four young children.

Dr. Algernon E. Woolverton, of Hamilton, died at Florence, Italy, December 8th. Dr. Woolverton was the son of the late Dr. Woolverton, of Grimsby, and a graduate of the University of Toronto. He practised in Hamilton for a number of years.

Dr. John Wiley died at Fort Fairfield, Maine, November 24th, in the sixty-first year of his age. He was a son of the late Dr. Robert Wiley, of Florenceville, New Brunswick.

Dr. William Roe died at Rochester, New York, November 28th. Dr. Roe was born near Wingham, Ontario.

Dr. George Eliot, of Grenfell, Saskatchewan, died November 29th. Dr. Eliot, who was born in India on August 13th, 1854, was the son of the late Major-General John Eliot. He graduated from the Royal College of Surgery, London, in 1877 and, four years later, came to Canada and took up practice at Grenfell.

Dr. Alexander Douglas Struthers, of Bedford, Quebec, died December 2nd, in the sixty-sixth year of his age. Dr. Struthers was born in the parish of St. Thomas, Quebec. He graduated from the McGill Normal School in 1875 and taught for some years at

Philipsburg and Frelighsburg. In 1882 he graduated in medicine from the McGill Medical College, and went into practice at Frelighsburg. Five years later he removed to Bedford where he continued to practise until about seven years ago. He is survived by a widow and an adopted daughter.

Dr. Augustus F. Schmidt, of Montreal, died suddenly December 7th. Dr. Schmidt was born in 1861 and graduated from McGill University in 1886.

Dr. J. W. Rowan, of Toronto, died December 26th, after a long illness, in the fifty-sixth year of his age. He was born at Woodbridge, and was a graduate of the University of Toronto and Trinity Medical College. Dr. Rowan enjoyed a large practice and did a great deal of charitable work in the poorer section of the city. He leaves a widow and two children.

News

MARITIME PROVINCES

Dr. Lewis Hunt, formerly of Halifax, has been elected mayor of Richmond, England.

Dr. Weldon has left Mace's Bay to take over the practice of Dr. Johnson at Grand Harbour, Grand Manan, New Brunswick. Dr. Johnson has gone to the front.

The sanatorium at East St. John was formally opened on December 9th. Accommodation is provided for fifty-three patients, and consists of a public ward containing thirty-two beds, a children's ward with eight beds, and rooms for private patients. The hospital is intended for patients suffering from pulmonary tuberculosis from the municipality and city of St. John. Should there be vacancies, however, patients from other parts of the province will be admitted. Dr. H. A. Ferris is the medical superintendent.

Dr. G. F. Dewar, of Charlottetown, Prince Edward Island, has been appointed acting medical superintendent of Falconwood Asylum during the absence of Dr. Goodwill, who is on active service.

ONTARIO

BEGINNING on the first of next month, serums and antitoxins will be supplied by the Provincial Board of Health free of charge to physicians, hospitals, municipalities, and to the public generally on production of a prescription from a physician.

DURING the month of November 1st, 1,113 cases of measles were reported in the province, nine of which were fatal. In Toronto alone 1,084 cases were reported and during December over 2,900 cases occurred; it has been necessary to establish a temporary hospital to accommodate some of the patients. Otherwise the health of the province was good. Other cases of contagious disease reported were, diphtheria, 283 cases, 17 deaths; tuberculosis, 107 cases, 64 deaths; scarlet fever, 97 cases; typhoid fever, 61 cases, 12 deaths; smallpox, 10 cases; whooping cough, 38 cases, 3 deaths; infantile paralysis, 2 cases, 1 death; cerebro-spinal meningitis, 7 cases, 5 deaths.

THE sum of $500,000 was recently cabled to the British Red Cross Society by His Honour the Lieutenant-Governor of the province. This is the third contribution that the province of Ontario has made to the Red Cross.

DR. G. C. HEYD, son of Mr. L. F. Heyd, K.C., of Toronto, has been appointed professor of surgical anatomy at the New York Post Graduate Medical School.

DR. ROBERT HANLEY, of Kingston, has been appointed surgeon of the provincial penitentiary in succession to Dr. Daniel Phelan. Dr. Hanley will continue his practice and will receive an honorarium of $1,300 a year instead of $2,400 received by Dr. Phelan, who, however, was not able to engage in private practice.

DR. W. T. CONNELL has been appointed consulting physician and surgeon to the penitentiary.

A BY-LAW for $5,000 in favour of the Berlin and Waterloo General Hospital will be submitted to the ratepayers of Berlin at the municipal elections.

ACCORDING to the annual report of the medical superintendent,

Dr. R. P. Hardman, 587 cases of diphtheria were admitted to the Ottawa Isolation Hospital during the past year. Thirty-nine deaths occurred, eight of whom were moribund on admission, and twenty-eight had been treated at home for from four to fourteen days before being sent to the hospital. Dr. Hardman makes an earnest plea for early treatment and submits figures to show that the percentage of deaths among children suffering from diphtheria increases with every day's delay until it reaches 50 per cent. among those who are kept at home for fourteen days before they are given proper treatment. Sixty-two cases of scarlet fever and ten cases of measles were also treated in the hospital.

Dr. J. M. Robb, of Blind River, has been elected to the provincial legislature by the constituency of Algoma.

Dr. Agatha Doherty, of Toronto, has been appointed senior surgeon at the Queen Charlotte Hospital, London, England.

The Honourable Dr. Thomas Sproule, of Markdale, Ontario, speaker of the House of Commons, has been appointed a member of the Senate.

The forty-first annual meeting of the Toronto Hospital for Incurables took place October 27th, Sir William Mortimer Clark presiding. The medical report, which was read by Dr. Aikins, chairman of the medical board, stated that 318 cases had been treated in the hospital during the year, and that at the time the report was written 234 patients were in the hospital. The cases treated included 61 cases of chronic nervous disease, 17 cases of cancer, 12 cases of arthritis, 9 cases of heart disease, cases of pernicious anæmia, diabetes, and Bright's disease. Fifty-six deaths were reported. It was emphasized at the meeting that an institution is greatly needed for patients who are unable to earn their own living, but are not ill enough to require skilled medical care and nursing.

At the annual meeting of the General and Marine Hospital, Collingwood, which took place on October 19th, Mr. D. Williams gave notice of his intention, at the next annual meeting, to propose a resolution to place hospitals throughout the province under municipal control.

QUEBEC

THE accommodation provided for invalided soldiers at the Khaki Convalescent Homes at Montreal has proved insufficient, and an additional hospital of one hundred and fifty beds has been established at the Grey Nunnery. The general conduct of the hospital has been undertaken by the Sisters. Two wards at the Montreal General Hospital are reserved for members of the C.E.F., where an average of one hundred and seventy-five soldiers are under treatment.

DR. ARMAND ROUSSEAU, of Quebec, has been appointed medical superintendent of the new tuberculosis hospital which has been established there temporarily. Drs. O. Leclerc and Fremont are on the medical staff of the institution.

THE recent effort to collect funds for the Children's Memorial Hospital at Montreal has met with a generous response and the hospital has been tided over a critical period. It is hoped that its founder, Dr. Mackenzie Forbes, will return from the front as it is felt that his services are indispensable at this juncture in the affairs of the institution. It is the intention to erect a tablet in recognition of the generous assistance given to the hospital by the citizens of Montreal.

MANITOBA

ON the occasion of his marriage, Dr. D. A. Stewart, medical superintendent of the Ninette Sanatorium, was presented with a magnificent drinking horn, made in Iceland, by former Icelandic patients. About fifty-eight Icelanders have been treated in the sanatorium.

ALBERTA

THE following is the list of contagious diseases reported in Calgary during the month of October, 1915: diphtheria, 10 cases; typhoid fever, 12 cases; chicken-pox, 15 cases; whooping cough, 28 cases; scarlet fever, 4 cases; measles, 2 cases; mumps, 4 cases, and tuberculosis, 5 cases.

A LUNCHEON was given by the Calgary Medical Society on December 1st in honour of Dr. W. T. Grenfell, of Labrador.

It was decided at a recent meeting of the Calgary Hospitals' Board to reduce the charges made by the hospitals to patients from country districts. It has been customary to charge such patients one dollar a day more than patients from the city of Calgary itself.

SASKATCHEWAN

A request was recently made to the provincial government that Dr. Arthur Wilson, medical officer of health at Saskatoon, should be appointed registrar of vital statistics. The request, which has not been complied with, was made because it was considered that were the registrar of vital statistics also an official in the department of public health, the work of the two departments would be facilitated and coördinated. The matter was discussed in a general way at the recent convention of the Canadian Public Health Association and a resolution was then passed in favour of the appointment of medical officers of health as registrars of vital statistics.

Dr. A. MacGilvary Young has been elected mayor of Saskatoon.

BRITISH COLUMBIA

Over two hundred practitioners from the province of British Columbia are now on active service and, in addition to No. 5 General Hospital, six sections of the field ambulance, each eighty-five strong, and several small detachments have been dispatched to England. The military hospital at Work Point Barracks is administered by a small detachment of the Permanent Army Medical Corps under the direction of Captain G. A. B. Hall. It comprises six wards with accommodation for thirty patients. Over eighty operations were performed during the period elapsing between January 1st and the middle of November, 1915; they included 15 operations for varicocele, 10 for appendicitis, 16 for varix, 12 for hernia, and 6 for tonsilitis.

MEDICAL COLLEGES

McGill University

The fourth year students, thirteen in number, who accompanied the McGill General Hospital to France are expected to return shortly to complete their studies.

Toronto University

DR. OLIVER MABEE, of Toronto, has been appointed temporarily to the Chair of Pathology in the university during the absence of Professor J. J. MacKenzie, who is with the University Hospital in Macedonia. The unit went from England to Saloniki and from there it is reported to have been sent to Macedonia.

Laval University

THE following changes have been made in the staff of the medical faculty of Laval University, Quebec: Dr. Joseph Guerard, professor of pathology, is now professor of general therapeutics; Dr. O. Leclerc is professor of physiotherapy and physiology, and also joint professor in the medical clinic of the Hotel Dieu.

ARMY MEDICAL SERVICES

LIEUTENANT-COLONEL A. Aitken Ross, R.A.M.C., who died recently in London after being invalided from the Dardanelles, was a Canadian by birth, having been born in Halifax.

THE sum of $17,650 has been subscribed to the maintenance fund of Queen's Stationary Hospital, C.E.F.

A WELL-DESERVED honour has been bestowed by His Majesty upon Surgeon-General G. Carleton Jones, director of medical services, who has been appointed Companion of the Order of St. Michael and St. George. The Royal Red Cross has been conferred upon Matron M. K. Macdonald.

THE following doctors have joined the Royal Army Medical Corps: Dr. Albert Collins, of Bridgeburg, Ontario; Dr. A. J. Fisher, of New Liskeard, Ontario; Dr. Morley C. Bridgeman, of Wellwood, Manitoba; Dr. J. McNichol, of Vancouver; Dr. Goodwill, of Charlottetown, Prince Edward Island; Dr. F. B. McIntosh, of Gore Bay, Ontario; Dr. Johnson, of Grand Manan, New Brunswick; Dr. Hunt, of Steelton, Ontario; Dr. Matheson, of Prince Albert, Saskatchewan; Dr. C. W. McBury, of Calgary; Dr. E. C. Beer, of Brandon; Dr. Boutellier, of Starbuck, Manitoba; Dr. A. A. C. Wilson, of Springhill, Nova Scotia; Dr. R. T. MacLaren, of Moosomin; Dr. M. W. Strong, of Prince Albert; Dr. E. Rommel, of Earl Grey; Dr. E. H. Freeman, of Mazenod, and Dr. H. W. Poddell, of Swift Current, Saskatchewan. Dr. R. J. C. Stevens, of Olds, Alberta; Dr. Matheson, of Cumberland House,

Manitoba; Dr. Walter S. Muir, of Truro, Nova Scotia; Drs. Beer and Carlisle, of Brandon, Manitoba.

Captain J. A. Cullum, A.M.C., medical officer of the 28th Battalion, Calgary, was recently mentioned in despatches for bravery in rescuing and attending the wounded under an extremely heavy fire, when a shell burst in front of the position held by the battalion. A number of men were injured; without hesitation Captain Cullum ran at once to the place where the shell had burst and, in spite of a heavy fire from the enemy, succeeded in rescuing several of those who were wounded.

The following medical officers of battalions have been appointed: Captain William Warwick, of St. John, New Brunswick, of the 115th Battalion; Captain J. Johnson, of Burgessville, Ontario, of the 91st Battalion; Captain J. B. Martyn, M.P.P., of Alvinston, Ontario, of the 145th Lambton County Overseas Battalion; Captain S. Mackay, of Windsor, Nova Scotia, of the 112th Battalion; Captain George E. Clerk, of Melville, Saskatchewan, surgeon-major of the 69th Battalion; Captain J. J. Brien, of Essex, Ontario, of the 99th Battalion; Dr. Lawther, of Brandon, of the 53rd Battalion; Captain R. D. Dunlop, of Calgary, of the 137th Battalion; Captain S. McKay, of Earltown, Nova Scotia, of the 112th Battalion; and Captain James Moore of Listowel, Ontario, of the 33rd Battalion, in succession to the late Major Becher.

Major Berdan, of London, Ontario, medical officer of the 135th Battalion, has been gazetted honorary lieutenant-colonel.

Lieutenant-Colonel James A. McCammon, of Brockville, is in command of the 156th Battalion which is being recruited in Leeds and Grenville.

Dr. William D. Sharpe, of Brampton, Ontario, who was in charge of the British Military Hospital at Belgrade, Serbia, until the occupation of that town by the Austro-German forces, has returned.

The military hospital which is to be erected in connexion with the Hamilton military camp will have accommodation for one hundred and fifty beds. The main building will contain three wards. An isolation hospital and an administration building will

also be provided. The plans call for an expenditure of about twelve hundred dollars.

MAJOR F. J. R. FORSTER, of Stratford, Ontario, has been transferred from the 28th Perth Regiment to the Army Medical Corps.

CAPTAIN WILLIAM HALE, of Utica, New York, has joined the C.A.M.C. Captain Hale is a Canadian. He was born at Gananoque, and graduated from Queen's University in 1910.

THE Cross of the Legion of Honour has been awarded to Lieutenant C. G. Wright, son of Mr. Alfred Wright, of Toronto. Dr. Wright has been in France with the Scottish Wireless Corps of the Royal Engineers since the commencement of the war. He is a graduate of Toronto University and accompanied the Scott Antarctic Expedition as physicist.

DR. DUGALD STEWART, M.P. for Lunenburg, Nova Scotia, has been gazetted major in the C.A.M.C. Major Stewart will conduct the medical examination of recruits at various places in the sixth division.

CAPTAINS H. WATSON, C. Anderson, A. Bagnall, and A. Davis are on duty at Shorncliffe.

CAPTAIN S. ALWYN SMITH, D.S.O., of Winnipeg, has been transferred from the 3rd Field Ambulance to London.

LIEUTENANT CHARLES E. HARMER, M.D., of H.M.S. *Cambria*, is a son of Mr. and Mrs. Robert Harmer, of Toronto. When the hospital ship *Anglia* was sunk in the Channel, Lieutenant Harmer rendered invaluable aid to the survivors and was indefatigable in the work of rescue. When the relief ships reached Dover he took charge of the medical and surgical arrangements and distinguished himself by his skill and devotion to duty.

CAPTAIN A. C. ARMSTRONG, C.A.M.C., of Moose Jaw, Saskatchewan, recently returned to Canada.

No. 3 General Hospital (McGill), has taken up its winter quarters at Boulogne, where it occupies a Jesuit College. Lieu-

tenant-Colonel H. B. Yates, of Montreal, who was on the staff of the hospital has been given command of a Cananian convalescent home of 250 beds at Bushy, England.

Dr. Andrew Hart, of Brockville, Ontario, has returned from the front and is convalescing at Kingston.

Major Young, of Ottawa, has been appointed assistant director of medical services at Bramshott, under Colonel Shillington. Major S. McCoy, of Toronto, has been appointed medical registrar at the Record Office, London.

Dr. A. G. Naismith, of Milverton, Ontario, who went to England with the Second Canadian Mounted Rifles of Victoria, has been given a commission as lieutenant in the R.A.M.C.

Captain O. A. Cannon, of Stratford, Ontario, recently returned from the Dardanelles on three months' leave of absence. He was appointed medical officer of the 110th Perth Battalion, but has since been transferred to London, Ontario, as deputy assistant director of medical services in No. 1. division.

Lieutenant-Colonel C. A. Peters, of Montreal, has been given command of No. 9 Field Ambulance, which is being recruited at Montreal. The officers of the unit are, Major Bazin, second in command, Major W. B. Howell, Captains H. H. Eyres, J. C. Tull, D. Waterson, F. J. Tees, A. Ross, and W. G. Maclachlan; and Lieutenant J. C. Pratt, quatermaster. In addition to the officers, the unit will have a rank and file of 248, including the members of Section A of No. 2 Field Ambulance which has been in training at Sherbrooke under Captain Eyres.

The following promotions in the A.M.C. are announced: to be Lieutenant-Colonel, Majors R. P. Wright, of Quebec, J. E. Davey and D. P. Kappele, of Hamilton; to be Major, Captain George J. Boyce, of Quebec; to be Captain, Lieutenants E. Millette, of Windsor Mills, Quebec; James Donald, of Cowley, Alberta; and Norman Ferguson.

The following doctors have been transferred from the C.A.M.C. and have been given commissions as temporary lieutenants in the

R.A.M.C.: Lieutenants T. J. Simpson, J. G. M. Sloane, C. J. Sparrow, M. J. Casserley, A. C. Johnston, C. E. Wilson, H. C. Sutton, H. B. Meyle, H. P. Roberts, A. W. Nixon, H. B. Stacpoole, J. D. Stewart, T. V. Saunders, P. W. Barker, T. R. Phipps, E. N. Drier, G. W. Carleton, W. W. Cruise, F. A. Ross, E. H. MacVicker, A. B. Moffatt, D. McKilgour, V. E. Cartwright, A. E. McKibbon, D. A. Warren, W. A. McLeod, E. S. Bissel, C. R. Younge, E. Bryceson, T. P. Devlin, J. R. Christiania, J. E. Macdonald, J. J. Hamelin, W. E. Fraser, R. W. Halliday, G. B. Wiswell, H. T. Douglas, G. W. Racey, T. A. Brandon, C. R. Totton, D. C. Wilson, and J. D. Curtis.

Colonel G. S. Rennie, C.A.M.C., has been appointed assistant director of medical services and officer commanding R.A.M.C. at Dover, England.

Lieutenant H. S. Gooderham is assisting Colonel Watt, of Winnipeg, who is in command of the Canadian hospital at Ramsgate. The staff includes Captains Cooper, registrar; Kirkpatrick, Hill, Norman, McLeod, and Hagey, dentist. Miss Ridley is the matron.

Dr. Wilfred Grenfell, of Labrador, has joined the second university contingent from Harvard University as senior surgeon.

Captain McKeown, of Toronto, has been appointed organizer of the Canadian Medical Pension Board in England.

The second winter military camp at Toronto was opened October 15th. The march of the troops from Niagara Camp to Toronto, a distance of ninety miles, commenced on October 25th and was completed on November 9th, under the direction of Colonel H. C. Bickford, a battalion leaving Niagara each morning. On October 15th, a hundred patients were conveyed from Niagara to the Exhibition Camp Hospital. This was the first occasion upon which a hospital train was used in this country; it was in charge of Lieutenant-Colonel T. B. Richardson. Major J. W. S. McCullough, who was chief sanitary officer at the Niagara Camp, will continue his duties at the Exhibition Camp. A medical board has been appointed, whose sittings will take place daily at the camp. The members are Lieutenant-Colonel George Acheson, of Hamilton, Captain A. H. Rolph, of Toronto, and Captain D. A. McClenahan, of Hamilton.

LIEUTENANT-COLONEL H. B. ANDERSON and Lieutenant-Colonel H. A. Bruce have been entrusted with the organization of the convalescent home for wounded soldiers at Toronto. They will elect the medical and surgical staffs, whose services will be gratuitous.

DR. J. G. M. SLOANE, R.A.M.C., is attached to a British hospital at Saloniki.

LIEUTENANT-COLONEL J. T. CLARKE, of Toronto, is now in command of No. 2 Canadain Stationary Hospital at Boulogne. Dr. Clarke was previously in command of No. 1 Stationary Hospital and was stationed at Le Tréport.

DR. R. H. MCDONALD, A.M.C., of Saskatoon, has been invalided home after an attack of typhoid fever. He expects to return to the front in a few months.

THE following is the list of officers of No. 7 Overseas Stationary Hospital: officer commanding, Lieutenant-Colonel John Stewart, Majors E. V. Hogan and L. M. Murray; Captains J. A. Murray, V. M. Mackay, F. V. Woodbury, E. Kirk Maclellan, John Rankin, Kenneth A. MacKenzie, S. J. MacKennan, D. A. MacLeod; honorary lieutenant, Walter Taylor, quartermaster; Lieutenant K. F. Woodbury, dental surgeon; and honorary lieutenant S. R. Balcom, dispenser. The unit was offered to the Militia Departent by Dalhousie University and several of the officers are members of the medical faculty of that university; the non-commissioned officers and men have been recruited from the province of Nova Scotia, and many of them are students of Mount Allison, King's College, Acadia, or Dalhousie. The unit was mobilized at Halifax and is at present in training there. It is hoped to collect the sum of $12,000 for additional equipment and maintenance of the unit and a committee has been formed consisting of Dr. G. B. Cutten, president of Acadia University, Dr. H. S. Mackenzie, president of the University of Dalhousie, Dr. B. C. Borden, president of Mount Allison University, and others, to direct the disposition of the funds subscribed. Mr. C. W. Frazee, manager of the Royal Bank, Halifax, has consented to act as treasurer of the fund.

ACCORDING to a cable received from Lieutenant-Colonel Etherington, the officer in command of the unit, it is proposed

to convert Queen's Stationary Hospital, which is at present stationed at Cairo, into a general hospital.

LIEUTENANT-COLONEL D. W. MCPHERSON, of Toronto, who has been in command of No. 2 Field Ambulance, C.E.F., in France, is now in charge of the Canadian Convalescent Hospital at Woodcote Park, Epsom, Surrey.

LIEUTENANT R. L. HUTTON, R.A.M.C., of Brantford, Ontario, has returned on three months' sick leave. Lieutenant Hutton was engaged as medical officer on a hospital transport at the Dardanelles.

CASUALTIES

Killed in Action

CAPTAIN HERBERT STANLEY MONKMAN, C.A.M.C., of Vegreville, Alberta.

Died

MAJOR A. V. BECHER, C.A.M.C., of London, Ontario, medical officer of 33rd Battalion. Died at Quebec from pneumonia.

CAPTAIN J. LEROY MAVETY, R.A.M.C., of Ottawa. Died from blood poisoning in France.

NURSING SISTER BESSIE E. SUTHERLAND, of Winnipeg. Died from typhoid fever at Caljano, Serbia, on September 15th, 1915.

CORRESPONDENCE FROM THE SEAT OF WAR

THE following is an extract from a letter written by Dr. Fraser Gurd, of Montreal, who is with the 22nd Casualty Clearing Station, British Expeditionary Force. The letter is dated October 2nd, 1915.

"As we have just had our first real taste of war surgery and experience, I thought that perhaps first impressions might be of interest to you.

We received our first convoy on Sunday afternoon (September 26th) about four o'clock. This consisted of one hundred and twenty moderately severe sitting cases, composed of men wounded by

shrapnel, rifle bullets, and bombs, and about fifteen gassed cases. The wounds were about equally divided between the different regions of the body, although there were but two head wounds,—one a depressed fracture of the outer table over the vertex, the other a man in whom the bullet entered the left cheek and made its exit above and behind the right auricle. Just what its route of passage was I could not make out, as œdema of the side of the face made it practically impossible to examine the pharynx. He ran a perfectly uninteresting course for the three days before we evacuated him except that for thirty-six hours he had a pharyngeal paralysis and had to be fed per rectum.

Amongst this lot were three fractures of the humerus in the region of the surgical neck. The striking feature of these cases (as well as of a number of cases of fractured femora which we received later) was the comparative absence of pain referable to the fractured bone. From cases which I operated upon I judge this to be due to the fact that a considerable length of bone, from $1\frac{1}{2}$ to 3 or 4 inches, is so shattered that there is little tendency for the bone ends to grate against one another.

Two hours after the first convoy we had a second of somewhat similar cases and of the same number. These as well as those of the first convoy were dressed, and their wounds examined. In a few cases shrapnel and bullets were removed under cocaine. I, personally, have employed in first dressings here (that is usually the third dressing since injury) either moist Wright's solution (citrated Sod. Chlor. sol.) or gauze soaked in methylated spirit and allowed to dry, thus acting as a sterile dry dressing and at the same time sterilizing the surrounding skin. The use of some such dressing appears necessary, since it is impossible to dress from fifty to one hundred cases an hour with moderately scant equipment with proper aseptic technique; nor do I see the benefit of applying moist dressings in all cases, since they lead to so much maceration of the skin.

In a certain number of cases of bullet wounds the effect of evaporating lead lotion has been excellent. The wounds are usually not infected but are accompanied by a considerable œdema and hyperæmia,—apparently the result of the high velocity of the projectile, and consequent traumatism. Pure glycerine soaked in lint and applied with an oil-silk covering has proven wonderfully good in several cases of extensive laceration and bruising of the tissues, accompanied by œdema and ecchymosis. One case treated with glycerine in this way was a man whose penis and testicles had

been badly torn and traumatized by a bomb explosion. He was suffering agony at the time of admission, about thirty hours after the reception of his wound. He was so tender that I was unable to clean up the parts or interfere with them in any way. He was marked for operation the next day, as there was no time at the time of his admission. I put on a big soft gauze dressing soaked in boric solution plus about one-third of glycerine. The next day the general appearance of the parts was so good that no operative interference was undertaken. He is now (four days later) quite comfortable, and the parts are approximately normal in size and are much less purple in colour. The same treatment has been persisted in at subsequent dressings.

Four cases from the first two convoys were operated upon by me under anæsthesia. Two of them were wounds of the back which showed early evidence of *Ærogenes Capsulatus* infection, i.e., gas bubbling through the brownish pus in the wound and a small gangrenous area ringed by an area of hyperæmia.

These operative cases were just finishing, when a third, somewhat larger, convoy arrived. The dressing of these cases was finished about 12.30 a.m. We were not disturbed during the night, nor did we receive any new cases until Tuesday. As a matter of fact, until we were able to evacuate a certain number of sitting cases on Monday night, we were pretty well filled up, with nearly four hundred and fifty cases.

On Monday afternoon we had four operative cases, and the same number on Tuesday. These consisted chiefly of the opening of wounds for the purpose of drainage and the removal of foreign material—bullets, shrapnel, khaki cloth, boot leather, and pulverized bone. The point which struck me most forcibly about these cases was the size of the track through the tissues; in about every case it was quite possible to carry the index finger along the channel produced by the projectile, and in about a dozen cases there was only one failure to localize the projectile, even though no *x*-rays were employed. Not infrequently the skin wound is quite small; but, if this is enlarged, it is not difficult to follow the route taken by the bullet.

The most satisfactory case which I had to deal with was a man whom I operated upon on Monday afternoon. Early on Sunday morning he was shot through the right upper arm. The bullet entered about one-third of the way above the elbow on the outer surface, fractured the humerus at the surgical neck, and made its exit just below the tip of the acromion. When I saw him on

Monday, he had a swollen, bruised upper arm with bluish and reddish-yellow discolouration about both wounds. From both wounds also was oozing a characteristically heavy-odoured, brownish, purulent discharge. When the arm and the pectoral and supraspinous scapular region were palpated, not only was crepitation elicited but gas could be expressed from the wounds in loud puffs. The man's general condition was but fair,; his pulse 110; and his appearance (facial) anxious and obviously depressed. I removed, practically *en bloc*, all the integument, the superficial fascia, and the muscle sheaths over an area roughly elliptical, with the long diameter reaching from two inches above the tip of the acromion to within one inch of the olecranon process, measuring about fifteen inches by eight inches. The underlying muscles were excised in doubtful-looking places. The whole surface was treated to hydrogen peroxide 10 volumes and a saturated solution of potassium permanganate applied as a moist dressing. Stimulation by strychnine and rectal saline was carried out during the latter stages of the operation, and the man returned to the ward in poor condition. His subsequent history has been perfect. No extension whatever took place; and this morning (October 2nd) practically the whole surface was covered with firm, non-sensitive granulations.

On Tuesday evening we received two convoys, one of severe lying cases, the other of very minor injuries. Among the twenty odd severe cases we had two cases of perforating wounds of the chest; both developed pneumonia of the opposite side and one died,—our only death in about five hundred casualties.

Three cases of fractured femur we put up in extension in the modification of Thomas' hip split devised by Cuthbert Wallace (*Lancet*, February 13th, 1915). This apparatus is easy to apply and makes the handling for dressing or transport of the patient a very easy matter. The patients themselves speak highly of the comfort obtained by its use. In the first case an anæsthetic was given, but in the other two ether was not necessary.

These cases ended our casualties from the recent engagement, and for the past few days we have been less busy, although on Thursday night I operated upon a case of strangulated hernia sent in from one of the field ambulances.

We have been fortunate in being allowed to keep our cases longer than is customary in Casualty Clearing Stations, as we still have all our lying cases. This has allowed us to judge for ourselves regarding the course to be followed in subsequent cases. In general the patients have done very well indeed, and all have overcome

their shock and now look fairly fit, although obviously the ultimate outcome of severe wounds of humerus and femur must be at best a far distant one."

Canadian Literature

Original Contributions

The Western Medical News, August, 1915:

The contrast between the surgery of the civil war and that of the present war .	W. W. Keen.
The indications and contraindications for the operative and truss treatments of hernia	A. V. Moschcowitz.
Pyorrhea alveolaris and rheumatoid affections	E. E. Kells.

Western Canada Medical Journal, August, 1915:

Heliography	O. J. Yelt.

The Canadian Practitioner and Review, October, 1915:

Radium and trichloracetic acid in dermatology	W. H. B. Aikins.
Nature and nurture in mental development	Helen MacMurchy.
The modern treatment of superficial malignant growths	Charles R. Dickson.

The Canadian Journal of Medicine and Surgery, November, 1915:

Presidents' address, Academy of Medicine, Toronto	W. H. B. Aikins.
Some remarks on mental hygiene and the prevention of insanity . . .	Campbell Meyers.
Disabilites, including injuries caused by bullets, shrapnel, high explosives, etc	A. Primrose.

The Canadian Practitioner and Review, November, 1915:

Poisoning by noxious gases . . J W. S. McCullough.
Dermoid cyst free in abdomen during pregnancy . . . . . J. Halpenny.
President's address, Academy of Medicine, Toronto . . . . . W. H. B. Aikins.

The Canada Lancet, October, 1915:

Tuberculosis and the bacteriology of everyday life . . . . . Sir James Grant.
The work of the observation hospital for mental cases . . . . . Harvey Clare.
Morphine scopolamine narcosis in labour . J. G. Gallie and W. A. Scott.

The Canada Lancet, November, 1915:

The medical profession and the war . . W. H. B. Aikins.
The medical commission . . . . . John Ferguson.

Western Canada Medical Journal, October, 1915:

Observations on lateral curvature of the spine . . . . . W. H. P. Galloway.

Dominion Medical Monthly, November, 1915:

Radium and trichloracetic acid in dermatology . . . . . W. H. B. Aikins.

Dominion Medical Monthly, December, 1915:

Organic obstruction of the ileum as a cause of gastric disturbance . . G. Chambers.
What is the practice of medicine . . J. S. Sprague.

The Public Health Journal, October, 1915:

Administration of the Toronto Department of Public Health . . . H. L. Brittain.
Pasteurization of milk . . . . . J. Race.
Tuberculosis and the bacteriology of everyday life . . . . . Sir James Grant.

The Toronto recruiting depot . . .	O. C. J. Withrow.
The registration of tuberculosis . .	Eunice Dyke.
Carriers and unrecognized cases of communicable disease and their relation to spread and continuance . .	W. J. Watt.

Le Bulletin Médical de Québec, October, 1915:

Le développement de l'enfant . . .	A. Jobin.
Traitement de la tuberculose réno-vésicale	G. Ahern.
Quelques affections chirurgicales rencontrées pendant la guerre actuelle .	C. Vézina.

Le Bulletin Médical de Québec, November, 1915:

Les végétations adenoides dans la pratique courante	J. D. Pagé.
Contribution à l'étude de la tétanie essentielle chez le nourrisson . . .	R. Fortier.

A PRIVATE sanatorium for the treatment of tuberculosis—the Calydor Sanatorium—is in process of construction on the shore of Lake Muskoka, and, it is hoped, will be ready for occupation early in the spring. The building has been fitted with every possible convenience and the medical equipment includes a thoroughly modern laboratory, *x*-ray room and throat room. Accommodation will be provided for twenty-one patients, who will be under the care of Dr. C. D. Parfitt, of Gravenhurst.

THE Canadian Women's War Work Committee has undertaken to equip and maintain in Folkeston, England, a convalescent home for Canadian soldiers. The hospital will be under the control of Colonel Mennie, A.D.M.S. Accommodation will be provided for fifty patients, and, later on, it is hoped that it will be possible to increase the number of beds.

Medical Societies

ACADEMY OF MEDICINE, TORONTO

Section of Pathology

The first meeting of the Section of Pathology of the Academy of Medicine, Toronto, was held on November 23rd, 1915.

The chairman, Major J. G. Fitzgerald, delivered his inaugural address upon the subject, "The use of ultra-violet rays for the sterilization of water in the field." The first experiments in the bactericidal action of ultra violet rays date back to 1878. Later work was done by Price in England and by Von Recklinghausen and others at the Sorbonne. The application of the rays was not practicable until the invention of the Cooper Hewitt lamp, which generates the rays from mercury in vacuum in a quartz tube. Several towns and cities in France use these light rays to purify their water supplies but they are not in use in any municipality in America.

This was applied to the water used at the military camp at Niagara this past summer. Since the lamp is not efficient with water containing much suspended matter, if it is not clean, water must be clarified before being treated. The camp supply was the water of the Niagara River which gave usual counts of 5,000 per cubic centimetre, and contained frequently colon in 1–10,000 of a c.c. and not infrequently in 1–100,000 c.c. After exposure for a fraction of a second none were found in 50 c.c. For safety two subsequent exposures were made to secure a high efficiency. Chlorination was used before installing the ultra violet ray, but because of the bacterial content 1 to 1·4 parts per million had to be used, making the water at times unpleasant.

Care is essential in that efficiency is impaired, (1) if the filtration or sedimentation plant fails, (2) when the vacuum in the lamp fails. These points must be watched, and if this is done, the method is highly satisfactory. For work in the field where the apparatus can be carried about with the wagon, water can be packed up anywhere and made quite safe for use.

Its use at Niagara Camp has been the first satisfactory practical application on a large scale in Canada. Fifteen hundred (1,500) gallons an hour running past three lamps gave an adequate supply of good water for the camp. The outfit was devised by Mr. Dalleyn,

the provincial sanitary engineer. The cost of installation was about twenty or twenty-five cents per head of soldiers in camp. No cases of typhoid developed from camp water. Eleven men had typhoid but all were in camp under eleven days and came from centres where typhoid was present.

Dr. G. W. Lougheed presented a paper with specimens on the subject, "Pulmonary thrombosis."

Case 1. In practice of Dr. G. B. Smith. Symptoms—palpitation, weakness, tachycardia, cyanosis if propped up in bed which was lessened on lying down and induced on slightest exertion, sudden death.

Case 2. In practice of Dr. H. C. Scadding. Had chlorosis three or four years ago for one week, weakness and breathlessness on exertion, fainted when going up stairs, transferred to hospital weak, with fœtal heart sounds, died suddenly on slight exertion in bed.

Case 3. Service of Dr. W. B. Thistle. Mitral stenosis, tachycardia, cyanosis and breathlessness when in upright position, lessened when lying down, increased on exertion, condition gradually becoming worse. This case was diagnosed during life.

Dr. H. B. Anderson reported a case of tumour of the pons. Case was referred by Dr. Bell, of North Bay. Female, married, no history of previous illness since childhood infections. July 15th, had attacks of headache, dizziness and diplopia, becoming more frequent and more severe—finally vomiting of a severe type appeared. Headache was general but greatest in occipital region. Would hold head and throw it from side to side. Intense at times, then wearing away for a time. Symptoms suggested cerebral tumour. On admission to hospital Dr. Colin Campbell reported a double optic neuritis, reaction of pupils slow and inconstant, phosis of right eyelid, some inequalities of pupil, right largest, numbness of right side of face and extending down right arm and leg, right patellar reflex increased, others not changed. At times a muttering delirium when headaches were severe, at other times mentally normal. Slight cyanosis, slow pulse, voided urine frequently, hiccough and involuntary evacuations came on in hospital, and abdomen was scaphoid, liver one inch below costal margin. Symptoms were those of cerebral tumour but its nature was not clear. No clinical evidence of syphilis, but Wasserman strongly positive. Condition did not warrant decompression operation. Symptoms improved somewhat under medicinal treatment, headache lessened, when one day patient became suddenly

markedly cyanosed and died, no convulsions. Specimens were demonstrated and described by Dr. Lougheed. Tumour was a gumma of pons and death due to hæmorrhage. The spirochæte was demonstrated.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE first regular meeting of the society was held Friday evening, October 8th, 1915. The retiring president read his address on the work of the past session and the secretary presented his report for the year. The meeting took the form of an informal smoker. The new president, Dr. F. A. L. Lockhart, presided.

The second regular meeting of the society was held Friday evening, October 22nd, 1915, the president, Dr. F. A. L. Lockhart, in the chair.

PATHOLOGICAL SPECIMENS: Series by Dr. Horst Oertel.

1. HÆMANGIO-ENDOTHELIOMA OF LIVER, WITH METASTASES IN SPLEEN, KIDNEY AND SACRUM.

This tumour is of interest on account of its rarity and the peculiar metastases it produced. The patient, a male fifty years of age, was under the care of Drs. Hamilton and Emerson Smith at the Royal Victoria Hospital, with a rather indefinite history. The chief complaint was a persistent double sciatica without remissions and extremely severe. Physical examination showed nothing very definite, though an enlargement of the liver was noticed and a skiagram revealed rather indefinite outlines in the sacral region. The individual was poorly nourished. He lost more weight during his stay in the hospital and became cachectic. On account of the persistent double sciatica and cachexia, suspicion was entertained by the physicians during life that the patient was suffering from a malignant tumour with metastases in the spine and sacrum, but, on account of lack of definite symptoms, the original site had to remain in doubt. There was nothing which pointed towards a growth from organs which we know to metastasize most frequently in bone, these being growths of the prostate, supra-renal gland, thyroid, and, in the female, breast.

Autopsy disclosed a globular, well circumscribed, bluish red, smooth tumour, on the anterior surface of the liver immediately to the left of the round ligament, measuring 6 cm. in diameter. It presented a rather mottled purple appearance and the surface showed small congested vessels. On section this tumour proved to be

relatively small, firm, and very hæmorrhagic, but some fibrous tissue bands and numerous larger blood-vessels could be distinctly differentiated. Towards the centre the tumour became softer, spongy, almost mushy. Throughout the substance of the liver there were numerous small nodules of very similar appearance. The spleen showed, near the centre of the organ, a small nodule the size of a large pea and in appearance very similar to those found in the liver. The kidney showed, grossly, no metastases, but microscopical examination later disclosed a few small foci. Examination of the bony pelvis showed extensive necrosis of the promontory of the sacrum and also partial destruction of both sacro-iliac joints, with necrosis of the adjoining iliac bones, apparently by the same tumour as that met in the liver and spleen. Search for other growths, particularly in the previously mentioned organs, was made in vain. The nature of the tumour at the time of autopsy was not quite clear. It resembled, grossly, the hæmorrhagic tumours of the supra-renal type and of the chorio-epitheliomatous character which occasionally are met with in sarcomatous and terratomatous tumours. The tumour, however, was so definitely vascular in type, without any characteristic yellowish mixture which results from the presence of the fatty supra-renal tissue, that its origin from misplaced suprarenal tissue became extremely doubtful, and evidences of terratomatous tumour were lacking. Microscopical examination disclosed later this very characteristic picture:

The tumour is made up of small, for the most part round, sometimes more polygonal or cuboidal, flat cells. They have a distinctly chromatic round central nucleus. They grow partly diffusely, and within or between these masses of cells appears an abundance of blood. In other places, however, a much more characteristic arrangement of the cells and blood distribution may be made out. In these areas cells are joined together, sometimes sitting on a basement membrane, and form short irregular, sometimes aborted, channels. These may or may not contain blood. While the growth presents the general characteristics of sarcoma, the type of cells, as well as their attempt of vascular arrangement where it can be made out at all, and the hæmorrhagic character of the tumour throughout, allow us to conclude that we have to do with a type of tumour known as sarcoma perivascular or perithelioma, or, perhaps more properly hæmangio-endothelioma, thereby signifying its direct genetic relation to the endothelial cells of the blood vessels. The origin of this growth in the liver is

probably a developmental one, and we know that small hæmangiomas which remain latent throughout life are not infrequently met with in the liver. These tumours clinically and anatomically may be benign, but, under conditions such as these, they assume all the characters of metastasizing malignant growths. A mestastasis of such a tumour in bone is, in my experience, at least, quite rare, and it is worth while to remember the case for these reasons.

2. Hypertrophy of Prostate with a Polypoid Middle Lobe.

The reason for presentation of this specimen lies in the fact that it is exceptionally typical, showing an almost text-book picture of the condition. The prostate shows enlargement around the urethral orifices on both sides. Rising from underneath the mucous membrane of the urethral orifice, and extending in polypoid fashion towards the bladder, is the middle lobe. The bladder also shows the results of long continued renal stasis in a hypertrophic cystitis with marked accentuation of the trabecular arrangement.

Discussion: Dr. F. A. L. Lockhart: The tumour of the liver is extremely interesting. The gross specimen strongly resembles a choreo-epithelioma which I had in a woman admitted to the Montreal General Hospital complaining of the usual symptoms of that condition. The uterus was removed for the disease but recurrence took place a few months later and she died in eight or nine months. At autopsy she had the most beautiful examples of recurrence in almost all the organs of the body. The brain and also the liver, I think, are in the museum at McGill, and in these situations were markedly circumscribed loculi of the dark tissue just as we have here. In cases of choreo-epithelioma we have the small punctate areas of hæmorrhage surrounding the denser areas and these gradually fade away.

Case Report: A case of meningitis, by Dr. C. A. Peters.

Last session I reported before this society an unusual case of meningitis occurring in a young girl with a sudden onset of a right-sided hemiplegia. The suddenness of onset with hemiplegia suggested a vascular brain lesion but it turned out to be a case of meningitis caused by the influenza bacillus due to an extension from the left nares through the cribriform plate of the ethmoid. The pus extended from the base of the brain to the left motor area and for some unaccountable reason remained there, thus causing the hemiplegia. To-night I would report a case of tuberculous meningitis occurring in a young lady aged twenty-three who was admitted to the Montreal General Hospital on September 3rd. The onset was

again with a right-sided hemiplegia. There was on admission paralysis of the right leg, right arm, right face and aphasia. It looked like a vascular lesion but there was no observable disease of the vascular system to account for it. There was no increased blood pressure and arterial degeneration to suggest hæmorrhage; no anæmia or weak heart muscle to suggest thrombosis and no endocarditis to suggest embolism.

Personal history: Measles in childhood; at eight years of age had operation for appendicitis; no history of rheumatic fever or chorea. History otherwise negative except that at times she had nausea and vomiting.

Family history; Father alive and well; two brothers alive and well. Mother died of tuberculous meningitis twenty years ago.

Present illness: On August 29th, five days before admission, she was seized with a severe left frontal headache, nausea and vomiting. Her right side felt stiff and weak and she was unable to lift her hand and foot. This lasted for a few minutes then she felt all right again but the same weakness recurred. This seemed to be worse in the mornings and before admission occurred eight or nine times a day, the headache continuing very severe. Two days before admission on waking she found she was unable to talk; this lasted for two hours. Next morning the same condition occurred and lasted a few hours but on the following day she could talk a little but not connectedly.

Condition on admission: Well nourished healthy looking young girl, very emotional. Patient talks in a whisper and there is a noticeable difficulty in saying many words; she knows what these words are but has difficulty in getting them out as there is a slurring of the words. In saying words to her she is able to pronounce them with a certain lisp. The right side of face and of body is immovable; definite hemiplegia; sensation over right side of body normal. The face is drawn to the left on attempting to whistle or on showing teeth. The pupils are equal and active; no ocular palsies. The knee jerks on the right side of the body are plus and there is a marked Babinsky and Oppenheim reflex of the right leg. Reflexes of right arm increased; reflexes of left side normal. The lymphatic, respiratory, vascular, digestive and urinary systems are normal. The temperature on admission was 99° and it ranged between that and normal for the first few days.

Her condition gradually improved for a time and in a week she recovered the use of the right arm, right leg, and to a less extent the right face. Her speech returned and she seemed to be getting

better; her mental condition was normal. About this time her headaches became worse, always in the left frontal area and were associated with frequent explosive vomiting. The examination of the eye grounds was very active and a lumbar puncture brought away a few c.c. of clear fluid not under pressure. Cell count 50 per cm. Wassermann reaction negative.

On September 18th the definite symptoms of meningitis appeared with involvement of nerves at the base of the brain as shown by involvement of the left sixth and seventh nerves. A Kernig's sign developed as well as retraction of the head. Her mental condition became dull and she gradually lapsed into unconsciousness. Another lumbar puncture brought away 20 c.c. of almost clear fluid under pressure showing 490 cells to cm. Her temperature was not high throughout the illness but gradually rose till just before her death on the 28th it was 106°. The whole illness was exactly one month.

The post mortem showed extensive miliary tubercles of large size. Great numbers of large ones were over the left motor area where there was also much œdema. In other places only a few isolated ones could be found.

2. Case of meningitis in a child, by Dr. McColl Metcalfe.

Discussion: Dr. C. F. Martin: In connexion with the case of the child I was very much interested in what Dr. Metcalfe had to say of pneumococcic infection in the ear. Recalling many post mortems done at the Foundling Hospital it was our practice to examine the ear particularly for pneumococci because of the fact that occasionally they were found in the ears of children dead of marasmus. In reality the pneumococcus was the causus mortis.

Dr. J. Kaufmann: With regard to the case of tuberculous meningitis, reported by Dr. Peters, it is interesting to note the comparative insignificance of the value of the examination of the fundi in this disease. Some recent authorities have claimed that tubercles of the choroid are met with in a very large proportion of cases of tuberculous meningitis. We have in the past six months paid particular attention to this finding, and have not been able to corroborate these observations save in a very small percentage in the very late stages of the disease. Dr. Tooke, who has been especially interested in the condition, has amply demonstrated in his recent studies that the above statement is correct, in fact he has only found tubercles in the choroid in seven cases of advanced tuberculous meningitis in a series of one hundred and two current cases of the disease examined. We have, therefore, logically con-

cluded that the finding of tubercles in the choroid in cases of tuberculous meningitis is a very rare occurrence in early cases and therefore of no value in the diagnosis of the disease.

The second point of interest is the study of the cerebro-spinal fluid in this disease. One always finds a marked excess of cells, especially of the lymphocytic variety and usually a marked increase in the globulin content. The tubercle bacillus can be demonstrated in fluid in a very large percentage of the cases of tuberculous meningitis. The technique employed is simple and easy to carry out; place the fluid in a medicine glass, drop a cover slip to the bottom of the fluid and allow the fluid to stand over night. The sediment which usually drops and deposits on the cover slip very commonly contains the tubercle bacillus which can be demonstrated by the usual methods in a very large percentage of cases.

Dr. C. A. Peters: I did not find any tubercle bacilli in the spinal fluid but Naguchi's test was very positive according to the pathological report.

ADDRESS: Skiagrams of medical interest, by Dr. C. F. Martin. Amongst the interesting plates exhibited by Dr. Martin, assisted by Dr. H. H. Cheney, were the following:

Plates showing defects in bone, though during life and clinically they showed elevations looking like periostitis, in a patient who had typhoid fever three months previously. Proved to be a true osteomyelitis with typhoid bacilli in pure culture.

Plates of patients who had been treated for neuritis showing (1) sarcoma of bone, (2) osteo-arthritis.

Plate of patient treated for chronic rheumatism of knee joint, proved to be abscess in knee—a Brodie's abscess; two other joints involved; condition infective. Staphylococcus and more rarely typhoid found in these abscesses. The tonsils are described as the important factor in connexion with these abscesses.

Another case of Brodie abscess where the original diagnosis was gout. There was swelling in the first metatarso-phalangeal joint which subsided and the painful condition settled more around the centre of the foot and for some time patient was unable to walk. Excessive uric acid was found. The abscess was at the lower end of the tibia.

Abscess in the teeth in a case of pernicious anæmia; the teeth themselves were in fairly good shape, the abscess being in the lower jaw. After cleaning out, the patient improved remarkably.

Plates showing various stomach conditions: (1) A condition which looks like ptosis but which is only a very low position for a

stomach which when empty may be discovered to rise more to a normal position. Tone is poor of course and the stomach should be treated along these lines, that is, very small feedings and careful diet; a large meal will tend to drag the stomach down. (2) Plate showing gastric ulcer. Interest centres about fact that we have what is so often found in ulcer of the lesser curvature, a very marked peristaltic movement opposite the place where the ulcer is. Case and others hold the view that most gastric ulcers cannot be diagnosed by the skiagram alone but by a combination of factors only. The two features on which the diagnosis of gastric ulcer are certain in radiographic work are the fleck of bismuth that remains and, secondly, the retaining of the bismuth in the stomach a definite time. In the ordinary ulcer, shallow or deep, if you see flecks of bismuth remaining in that portion you can feel sure that you are dealing with a gastric ulcer, but this is extremely rare. A filling defect is another feature which helps the diagnosis considerably. That occurs chiefly in the malignant ulcers where there is a large area involved and where the bulging of the part allows the bismuth only to go around it and makes a very definite shadow. A picture here is very typical of this condition.

Plates showing normal stomachs in different stages of peristalsis.

Advanced carcinoma of the stomach showing filling defects. In these conditions one must take repeated plates to get a diagnosis.

Peribronchial glands, condition showing extension to roots of lungs. This is another aid to diagnosis in young children with indefinite symptoms, fever, etc., where other glands have been examined. One plate taken of a child who had had fever for several weeks and everything looked like typhoid, a definite lesion in the peribronchical glands is seen.

The *x*-ray is of value also in those cases which resemble typhoid and yet show no signs of positive typhoid, and which later prove to be miliary tuberculosis. In one case there had been fever, intermittent, for many weeks, and apart from a slight bronchitis there was nothing to indicate what the condition was. The *x*-ray showed an early condition of miliary tuberculosis and successive pictures were taken till the end showing the extension of the condition.

Another interesting chest condition was that of a man from Quebec who came for treatment because of some dyspnœa; he felt weak and was a little pale. There was nothing physically to account for the condition and physical examination showed only two things of importance, that he had a marked anæmia and that

he had a very slight dulness along one side of the sternum. Here the plate showed a marked evidence of some trouble in the mediastinum—a broad shadow suggesting a mediastinal lesion of some kind; no tubercle bacilli, no reaction of the Tbc. test, no leucocytosis, nothing on which to hang a diagnosis, and a tentative diagnosis of some neoplasm was given. He worked for some time then went to Winnipeg. I saw his doctor three months later who said he was practically the same but somewhat weaker. A few days after I had seen him he had a fit of coughing and brought up some foul-smelling matter, evidently coming from some abscess. This expectoration continued, and after remaining in bed for a few weeks he went to Rochester to see the Mayos who diagnosed tuberculosis of the lung and advised sanitarium treatment. He returned to Quebec with a view to taking the outdoor treatment and saw Dr. Byers at Ste. Agathe who suggested his coming to Montreal for another examination on account of his very purulent sputum. The second skiagram showed a marked development of the condition and marked evidence of an abscess growing from the mediastinum in the lung. He was operated on, the abscess drained and he is now doing very well.

Plate showing emphysema and nephritis.

Plates showing abscess of the lung which examined stereoptically show whole chest with abscess inside.

THUNDER BAY MEDICAL ASSOCIATION

THE annual dinner of the Thunder Bay Medical Association took place at Fort William on December 9th. About twenty members were present on this occasion but the proceedings were divested of their usual gaiety by the fact that ten members of the association are serving under the colours. They are Drs. J. A. Crozier, W. Williamson, and R. E. Wodehouse, of Port Arthur; and Drs. G. E. McCartney, H. Taylor, W. L. McCullough, R. J. Pickup, H. E. Paul, J. G. Hunt, and J. E. Martin, of Fort William. Dr. R. J. Manion has been at the front, where he was engaged in Red Cross work, but has returned. The officers elected for the year 1915-1916 are: president, Dr. E. B. Oliver, of Fort William; vice-president, Dr. R. W. Bucke, of Port Arthur; secretary-treasurer, Dr. W. Seymour Hunt, of Port Arthur (reëlected). Council: Drs. Oliver, Bucke, Seymour Hunt, Gillie and Powel.

ALBERTA MEDICAL ASSOCIATION

THE tenth annual meeting of the Alberta Medical Association was held at Banff on August 20th and 21st, last, under the presidency of His Honour the Lieutenant-Governor, Dr. R. G. Brett. The minutes of the last meeting were read and adopted on motion by Dr. Gershaw, seconded by Dr. Whitelaw, and the financial statement was submitted by Dr. Gershaw.

It was moved by Dr. G. Anderson that the chairman appoint the Nominating Committee; Dr. Lincoln seconded the motion, and the following were appointed accordingly: Drs. L. S. Mackid, Anderson, Moshier, H. Johnson, and Learmouth. The election of officers resulted as follows: president, Dr. J. A. Whitelaw, of Edmonton; first vice-president, Dr. W. A. Lincoln, of Calgary; second vice-president, Dr. Campbell, of Lethbridge; secretary-treasurer, Dr. H. H. Moshier, of Edmonton. Councillors: Drs. E. Allan, Field, Parsons, Gershaw, and Learmouth. Committee on Legislation: Drs. R. G. Brett, Revell, and Smythe. Committee on Ethics: Drs. F. D. Wilson, G. A. Anderson, and W. McEachern. Finance Committee: Drs. Boyles, Wells, Reed, Sanson, and Gershaw. Committee on Arrangements: Drs. Campbell, L. S. Mackid, and Hackney. Public Health Committee: Drs. Norman, McCallam, Mahood, Stanley, and D. R. Robertson.

An invitation was extended by Dr. H. H. Moshier, on behalf of the University of Alberta and the medical profession of Edmonton, to the association to hold its annual meeting at Edmonton next year. Dr. Moshier was ably seconded by Dr. Whitelaw, and on the motion of Dr. Lincoln and Dr. Learmouth the invitation was accepted. A draft of the Constitution and By-laws of the association was then read by the president and, after discussion, was adopted.

The offer of a fully equipped hospital of one thousand and forty beds for service overseas, made to the Militia Department by the University of Alberta, was referred to by the president. It was pointed out that the offer had been refused for the present but as the association was desirous of expressing its approval of the offer, the following resolution was passed: Moved that the Alberta Medical Association puts itself on record as being strongly in favour of a scheme to form a hospital unit to be placed at the disposal of the War Office and to be called upon when required; and also as being in favour of authorizing the Alberta College of Physicians and Surgeons to support, as fully as its finances

will permit, the organization of the hospital unit. It was further moved by Dr. A. A. Lincoln, and seconded by Dr. Williams: That the Alberta Medical Association endorse the efforts of the Alberta Nurses' Association to obtain registration, and that a copy of that resolution be sent to the provincial legislature and the Provincial Nurses' Association. The motion was carried.

The presidential address was then delivered by Dr. R. G. Brett, who spoke of the "Social evil", and quoted statistics to show the terrible effects of those two diseases included under this title. Several suggestions were made by which the evil effects might be mitigated and the medical profession was urged to do more to enlighten the public concerning the prevention and cure of these diseases. Dr. G. A. Anderson gave a paper on "Some practical observations on the diagnosis of diseases of the alimentary tract", and Dr. W. A. Lincoln dealt with "Traumatic aneurism and its surgical cure". "Complications of long standing ventral hernia" was the subject of a paper by Dr. H. Reed, and Dr. R. G. Williams gave some notes on the "Treatment of empyema by continuous aspiration". Dr. G. Learmouth read a paper on "Acute mammary carcinomatosis". Dr. Whitelaw's paper on "The Public Health Act; its merits and defects" was especially interesting, and it was moved by Dr. Lincoln and seconded by Dr. Learmouth that the paper should be sent to the chairman of the provincial board of health, which accordingly was done. Papers were also given by Dr. Parsons, of Red Deer, and Dr. Moshier, of Edmonton. Dr. L. S. Mackid presented a case report on "Sarcoma of the intestines in a child seven years of age".

As was to be expected under the circumstances, the attendance was not so large as usual and, consequently, comparatively little discussion took place.

BERLIN AND WATERLOO MEDICAL ASSOCIATION

A MEETING of the Berlin and Waterloo Medical Association took place at Berlin, Ontario, on the evening of November 4th. The attendance was good. The chief feature of the meeting was a discussion on diabetes, led by Dr. Weidenhammer, of Waterloo, which proved of great interest. The treatment of free patients at the hospital was considered and it was decided that two physicians should be appointed by the asscoiation each month—preferably one from Berlin and the other from Waterloo—to attend to indigent patients.

VANCOUVER MEDICAL ASSOCIATION

A CLINICAL meeting of the Vancouver Medical Association took place at the General Hospital on November 22nd, Dr. H. H. Riggs in the chair. The attendance was good. Interesting papers and case reports were read by Drs. Berall, Maxwell, and Seldon.

WINNIPEG MEDICAL SOCIETY

THE Winnipeg Medical Society met on Friday, October 22nd. The presidential address was delivered by Dr. James McKenty, who spoke of the trend of modern progress in medicine and indicated certain directions in which reforms might be made with advantage mentioning particularly the haphazard way in which histories of cases were frequently kept. The election of officers for the year 1915-1916 resulted as follows: president, Dr. Jasper Halpenny; secretary, Dr. Secord; treasurer, Dr. Allum; vice-president, Dr. Robert Rorke; member of council, Dr. Hugh Mackay.

HURON MEDICAL ASSOCIATION

THE Huron Medical Association met at Clinton, Ontario, on December 17th. Papers were contributed by Dr. McKay and Dr. Burrows, of Seaforth, and Dr. Thompson, of Clinton. The officers elected for the year 1916 are; president, Dr. Machell, of Dublin; vice-president, Dr. Gallow, of Seaforth; secretary, Dr. Hunter, of Goderich. The next quarterly meeting of the association will take place at Seaforth.

ESSEX MEDICAL SOCIETY

A MEETING of the Essex Medical Society took place at Windsor, Ontario, on Friday evening, December 17th, when a discussion took place concerning the illicit traffic in morphine, cocaine, and other drugs, which, it is alleged, has been done in Windsor. It appears the matter has been much exaggerated but cases have occurred in which the names of physicians resident in the town have been forged to prescriptions for such drugs, or the amounts stated in a prescription have been increased. It was resolved "that narcotic drugs shall not be prescribed to patients residing outside of this community unless they enter a suitable institution for treatment."

Medical Societies

CANADIAN MEDICAL ASSOCIATION:—President—Dr. Murray MacLaren, St. John, N.B. President-elect—Dr. R. E. McKechnie, Vancouver. Secretary-treasurer—Dr. W. W. Francis, 836 University Street, Montreal.
Annual Meeting, Vancouver, B.C., 1915, postponed.

ACADEMY OF MEDICINE, TORONTO:—President—Dr. W. H. B. Aikins, 134 Bloor Street West. Secretary—Dr. J. H. Elliot, 11 Spadina Road.

ALBERTA MEDICAL ASSOCIATION:—President—Dr. T. H. Whitelaw, Edmonton. Secretary—Dr. H. H. Moshier, Edmonton.

ASSOCIATION OF MEDICAL OFFICERS OF THE MILITIA:—President—Lt.-Colonel A. T. Shillington, A.M.C., Ottawa. Secretary—Captain T. H. Leggett, A.M.C., Ottawa.

BRITISH COLUMBIA MEDICAL ASSOCIATION:—President—Dr. J. Glen Campbell, Vancouver. Secretary—Dr. H. W. Riggs, Vancouver.

CALGARY MEDICAL SOCIETY:—President—Dr. W. A. Lincoln, Secretary—Dr H. A. Gibson. Treasurer—Dr. H. H. Johnson.

CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS:—President—Dr. J. G. Adami, Montreal. Secretary—Dr. George D. Porter, Ottawa.

CANADIAN HOSPITAL ASSOCIATION:—President—Dr. H. A. Boyce, Belleville. Secretary—Dr. J. N. E. Brown, Toronto.

CANADIAN PUBLIC HEALTH ASSOCIATION:—President—Dr. C. J. Hastings, Toronto. Secretary—Dr. O. Withrow, Lumsden Building, Toronto.

CENTRAL SOUTHERN ALBERTA MEDICAL SOCIETY:—President—Dr. J. S. Murray, Okotoks. Secretary-treasurer—Dr. G. E. Learmonth, High River.

COLCHESTER-HANTS MEDICAL SOCIETY:—President—Dr. J. W. T. Patton, Truro. Secretary—Dr. H. V. Kent, Truro.

EDMONTON ACADEMY OF MEDICINE:—President—Dr. C. U. Holmes. Secretary-treasurer—Dr. E. L. Garner. Library, 12 Credit Foncier, Building.

ELGIN COUNTY MEDICAL ASSOCIATION:—President—Dr. D. A. Cameron, Dutton, Ont. Secretary-treasurer—Dr. A. B. Riddell, Bayham, Ont.

FRASER VALLEY MEDICAL SOCIETY:—President—Dr. DeWolfe Smith. Secretary—Dr. D. F. Carswell.

HALDIMAND COUNTY MEDICAL ASSOCIATION:—President—Dr. Hopkins, Dunnville. Secretary—Dr. Courley, Cayuga, Ont.

HALIFAX MEDICAL ASSOCIATION:—President—Dr. K. A. McKenzie. Secretary—Dr. F. V. Wood.

HAMILTON MEDICAL ASSOCIATION:—President—Dr. John Y. Parry. Corresponding Secretary—Dr. P. D. MacFarlane. Recording Secretary—Dr. O. W. Niemier.

HURON MEDICAL ASSOCIATION:—President—Dr. Machell. Secretary—Dr. Hunter, Goderich, Ont.

KINGSTON MEDICAL AND SURGICAL SOCIETY:—President—Dr. W. G. Anglin. Secretary—Dr. W. T. Connell. Treasurer—Dr. G. W. Mylks.

LAMBTON COUNTY MEDICAL ASSOCIATION:—President—Dr. R. M. Calder, Petrolea. Secretary-treasurer—Dr. J. E. Kidd, Wyoming.

LONDON MEDICAL ASSOCIATION:—President—Dr. C. H. Reason, 538 Dundas Street. Secretary-treasurer—Dr. L. S. Holmes, 260 Hamilton Road.

LUNENBURG-QUEEN'S MEDICAL SOCIETY:—President—Dr. J. W. Smith. Liverpool. Secretary—Dr. L. T. W. Penney, Lunenburg.

MANITOBA MEDICAL ASSOCIATION:—President—Dr. J. S. Poole, Neepawa. Secretary—Dr. Ross Mitchell, Winnipeg. Treasurer—Dr. Glen Hamilton, Winnipeg.

Medical Societies—*Continued*

MEDICAL OFFICERS OF HEALTH FOR COUNTIES OF LINCOLN AND WELLAND:—President—Dr. King, St. Catharines. Secretary-treasurer—Dr. Howell, Welland.

MEDICINE HAT MEDICAL SOCIETY:—President—Dr. W. M. Thomas. Vice-President—Dr. W. H. MacDonald. Secretary-treasurer—Dr. A. V. Brown.

MONTREAL MEDICO-CHIRURGICAL SOCIETY:—President—Dr. F. A. L. Lockhart. Secretary—Dr. Grant Campbell.

MOOSE JAW MEDICAL SOCIETY:—President—Dr. J. M. Hourigan. Secretary-treasurer—Dr. J. Bloomer.

NEW BRUNSWICK MEDICAL SOCIETY:—President—Dr. W. W. White, St. John. Secretary—Dr. J. D. Lawson, St. Stephen. Treasurer—Dr. W. E. Gray, Milltown.

NIAGARA DISTRICT MEDICAL ASSOCIATION:—President—Dr. E. T. Kellam, Niagara Falls. Secretary—Dr. G. M. Davis, Welland.

NOVA SCOTIA MEDICAL SOCIETY:—President—Dr. C. J. Miller, New Glasgow. Secretary—Dr. J. R. Corston, Halifax.

ONTARIO MEDICAL ASSOCIATION:—President—Dr. H. B. Anderson, 184 Bloor Street East, Toronto. Secretary—Dr. F. A. Clarkson, 421 Bloor Street West, Toronto. Assistant Secretary—Dr. F. C. Harrison, 29 Roxborough Street West, Toronto.

Annual meeting, Toronto, May 30th-June 2nd, 1916.

OTTAWA MEDICAL SOCIETY:—President—Dr. Charles W. Gorrell. Secretary—Dr. A. MacLaren. Treasurer—Dr. Harold Alford.

OTTAWA MEDICO-CHIRURGICAL SOCIETY:—President—Dr. J. F. Argue. Secretary—Dr. R. K. Paterson. Treasurer—Dr. A. S. McElroy.

PERTH COUNTY MEDICAL ASSOCIATION:—President—Dr. C. F. Smith, St. Mary's. Secretary-treasurer—Dr. F. J. R. Forster, Stratford.

PETERBORO MEDICAL ASSOCIATION:—President—Dr. J. V. Gallivan. Secretary—Dr. D. C. King. Treasurer—Dr. N. D. Buchanan.

PICTOU COUNTY MEDICAL ASSOCIATION:—President—Dr. C. S. Elliott, Stellarton. Secretary—Dr. John Bell, New Glasgow.

PRINCE EDWARD ISLAND MEDICAL ASSOCIATION:—President—Dr. A. A. MacDonald. Secretary—Dr. W. J. MacMillan, Charlottetown.

REGINA MEDICAL SOCIETY:—President—Dr. Gorrell. Secretary—Dr. Dakin.

ST. JOHN MEDICAL SOCIETY:—President—Dr. D. Malcolm. Secretary—Dr. F. P. Dunlop.

ST. THOMAS MEDICAL ASSOCIATION:—President—Dr. D. L. Ewin. Secretary-treasurer—Dr. James A. Campbell.

SASKATCHEWAN MEDICAL ASSOCIATION:—President—Dr. G. P. Bawden. Secretary—Dr. C. G. Sutherland, Moose Jaw.

SASKATOON MEDICAL ASSOCIATION:—President—Dr. T. W. Walker. Secretary—Dr. J. T. Mackay.

SWIFT CURRENT DISTRICT MEDICAL ASSOCIATION:—President—Dr. Graham. Secretary-treasurer—Dr. Hughes.

THUNDER BAY MEDICAL SOCIETY:—President—Dr. E. B. Oliver, Fort William. Secretary-treasurer—Dr. J. G. Hunt, Port Arthur.

VALLEY MEDICAL SOCIETY:—President—Dr. M. E. Armstrong, Bridgetown. Secretary—Dr. T. M. MacKinnon, Berwick, N.S.

VANCOUVER MEDICAL ASSOCIATION:—President—Dr. W. D. Keith. Secretary—Dr. J. H. MacDermot.

WEST ELGIN MEDICAL SOCIETY:—President—Dr. Crane, Wallacetown. Vice-President—Dr. Webster, West Lorne. Secretary-treasurer—Dr. Smith, Fingal.

WINNIPEG MEDICAL SOCIETY:—President—Dr. Jasper Halpenny. Secretary—Dr. Secord.